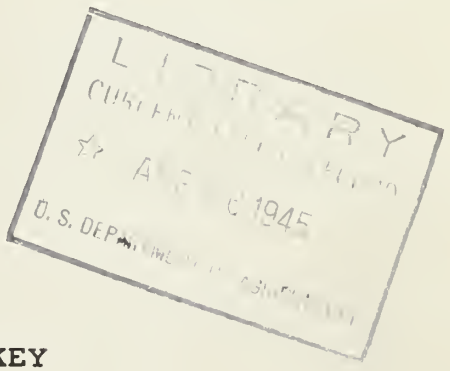
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

166.3
A68
Exp2

FARM CREDIT ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

COOPERATIVE FEED DISTRIBUTION IN THE NEW ORLEANS FARM CREDIT DISTRICT



By

LACEY F. RICKEY

COOPERATIVE RESEARCH AND SERVICE DIVISION

Miscellaneous Report No. 76

January 1945

INV. '60

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM CREDIT ADMINISTRATION

I. W. Duggan, Governor

Cooperative Research and Service Division

Harold Hedges, Acting Chief W. W. Fetrow, Associate Chief

CONTENTS

Copies of this publication may be had
on request while a supply is available
from the
Director of Information and Extension
Farm Credit Administration
Kansas City 8, Missouri

SUMMARY

Several cooperative associations in the Fifth Farm Credit District, comprising the States of Alabama, Louisiana, and Mississippi, have been distributing feeds for some time and are interested in the establishment of cooperative feed mills.

These associations, together with some others that contemplate adding feeds to the lines they now handle, would afford a ready-made distribution system for a new cooperative mill, or mills.

These States now have comparatively large numbers of cattle, hogs, and poultry and find it necessary to bring in feeding materials from other States.

The possibilities of organizing cooperative feed mills in some of these areas, while a normal development of the farm cooperative purchasing movement would help farmers owning livestock and poultry in these States in their efforts to produce the maximum supply of high quality food during the war. Such mills would aid farmers by assuring them a steady supply of feed of known quality and at the same time cut production costs by making additional savings on their feed purchases. In cases where present financial or membership conditions are not right, or where the need for new facilities is not sufficient to warrant necessary priorities, feed mills may well be considered a part of the early postwar programs of farmers and their cooperatives.

The 1940 census shows nearly $16,000,000 worth of feeds purchased by farmers in these three States in 1939. Sales of feeds registered with the State feed control officials indicate quantities considerably in excess of this. With feed taxes paid on 755,000 tons in 1939 and 1,531,000 tons in 1943, sales may be estimated at from $40,000,000 to $90,000,000 yearly.

While the 1940 census shows one Louisiana parish in which 48 percent of the farmers are buying through cooperatives, by far the larger number of parishes and counties show such purchases being made by less than 10 percent of the farmers. There, of course, has been considerable expansion in this type of activity since that time.

The associations studied are generally in good financial condition and have fairly well developed distribution systems, competent management, and the support of their members. Some have been distinctly successful in the manufacture and distribution of fertilizers.

The banding together of farmers to manufacture feeds for use on their own farms offers many advantages. Like fertilizer, feed is a commodity on which price or appearance is not always a reliable guide to quality. Where cooperative feed mills have been in operation for some time, patrons have learned that the quality and the price of the feeds they supply can be depended upon to represent substantial savings to farmers.

Some of the more important factors in the successful operation of a feed mill may be listed as follows:

1. The mill should be well designed and of adequate size.

2. Location should be carefully chosen so that ingredients can be brought to the mill and feeds distributed to the farms at the least possible total cost.

3. A commetent manager is essential. He should be a good administrator, should know feed milling, livestock, farming conditions, and the habits and characteristics of the people with whom he must deal.

4. The buying of many hundreds of thousands of dollars worth of feed ingredients each year is a job which requires special skill. If this skill is not available to a new mill, the possibility of having some established cooperative mill perform this function on a contractual basis should be investigated.

5. Feeds, of course, must be distributed from mill to farms. Associations now operating in these States have established distribution systems which would simplify this problem.

Large feed mills have certain advantages and limitations and small feed mills have other offsetting advantages and limitations. There is danger in either overbuilding or underbuilding. Mills should be planned carefully to make full use of local advantages and to meet the needs of the territories they will serve.

Mill operating costs vary greatly, depending on many factors, including the kind and extent of services rendered. Margins are affected largely by pricing policies. In general, however, cooperative feed mills have been able to provide high quality feeds at substantial savings to the patrons and to increase their volume of business quite rapidly.

COOPERATIVE FEED DISTRIBUTION IN THE NEW ORLEANS FARM CREDIT DISTRICT

By
LACEY F. RICKEY
Senior Agricultural Economist

Several cooperative associations in the "Deep South" have recently been active in feed manufacturing and distribution, but most of the associations handling livestock and poultry feeds in the Fifth Farm Credit District, comprising the States of Alabama, Louisiana, and Mississippi, have not undertaken feed manufacturing. They have purchased their supplies from commercial mills.

Many cooperative leaders have believed that cooperatives in the area should probably expand their operations into the manufacturing field. In appraising the possibilities of such a step, the New Orleans Bank for Cooperatives and several of the associations handling farm supplies in these States worked with the Cooperative Research and Service Division of the Farm Credit Administration in a survey to determine what manufacturing is being done and what success might reasonably be expected to follow such expansion. Several feed cooperatives were visited to assemble information which might be useful in answering these questions. While no complete study of all the basic factors could be made at the time, the information compiled should serve as a basis for further study and for action when it appears desirable.

Brief sketches are included on the following cooperative associations which are now handling feed in these States or which, it appears, might well consider adding feed manufacture and distribution to their present activities:

Farmers Marketing and Exchange Association, Inc.
Montgomery, Alabama

Tennessee Valley Fertilizer Cooperative, Inc.
Decatur, Alabama

Alaga Feed Cooperative, Inc.
Columbus, Georgia

Mississippi Federated Cooperatives, A. A. L.
Jackson, Mississippi

Central Farmers Exchange, A. A. L.
Jackson, Mississippi

Cooperatives of Louisiana, Inc.
Baton Rouge, Louisiana

NOTE: The author wishes to record his appreciation of the splendid assistance given by the management of cooperative associations in the Fifth District and officers of the New Orleans Bank for Cooperatives. Also for counsel and review by Dr. Joseph G. Knapp, In Charge, Purchasing Section, Cooperative Research and Service Division, Farm Credit Administration, and for technical and secretarial assistance by Mrs. Catherine Boswell.

Lafayette Dairymens Cooperative, Inc.
Lafayette, Louisiana

Dairy Farmers Cooperative Association, Inc.
Kentwood, Louisiana

St. Landry Soybean Cooperative, Inc.
Washington, Louisiana

Analysis of the probable demand for mixed feeds in these States, calls for a review of the general types of farming, the numbers of livestock and poultry on farms, and the volume of feeds sold, as obtained from the State Feed Control officials and from other sources.

TYPES OF FARMING IN THE FIFTH DISTRICT

Most of the agricultural land of these three States is in the general cotton producing area, as shown in figure 1. Southern Louisiana is devoted largely to the production of rice and sugarcane and there are some specialized truck-crop and fruit sections. There has been a marked trend toward diversification over the past several years and the numbers of livestock on farms have increased considerably. These changes from 1930 to 1940 are indicated by the census data for these years, as shown in table 1 and figure 2. The smallest apparent increase was in chickens but the change in the age of chickens counted, from 3 months old in the 1930 census to 4 months old in the 1940 census, tends to hide a large part of the actual increase that took place. The largest increase was in hogs and pigs. While a similar change was made in the age of animals enumerated as was made for chickens, this change would not make so much difference in the number of pigs as in the number of chickens on hand.

As a general indication of the sections in which sales of sizable quantities of mixed feeds might reasonably be expected, the distribution of livestock population by counties is of interest. The general areas of concentration of large numbers of cattle and calves are indicated by figure 3 which shows thousands of head in each county according to the 1940 census. It will be seen that areas of heavy cattle population are in west-central Alabama, southwestern Louisiana, and central Mississippi.

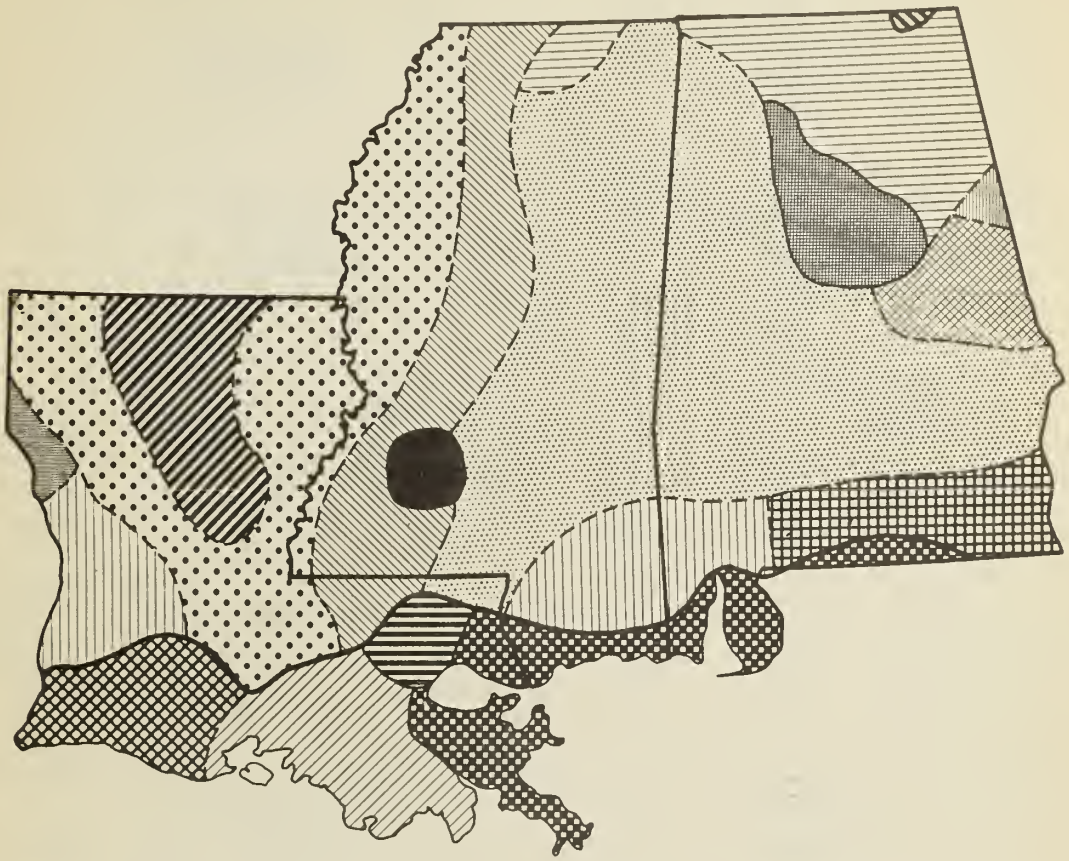
Wider distribution of milk cows is shown in figure 4. Single counties and small groups of counties which have large numbers of dairy cattle are scattered rather widely throughout the three States. The small numbers in southeast Mississippi and in the section of Louisiana lying below New Orleans are quite noticeable. These maps are based on numbers per county and, therefore, because of the varying size of counties and of actual acres of farm land in the counties, do not show accurately livestock population per square mile of agricultural land. General areas of concentration are, however, clearly indicated.

In general, the areas where large numbers of hogs are grown are distinct from the centers of cattle population, with the one exception of a few counties in central Louisiana that have many cattle as well as hogs. Figure 5 shows hog concentration in southeastern Alabama, parts of the Mississippi Delta, and central Louisiana.

The principal areas where large numbers of chickens are kept (figure 6) are in the Sand Mountain section of northeastern Alabama and in Baldwin County, in part of the Mississippi Delta, and in south-central Louisiana. A larger part of the rations fed

FIGURE 1

REGIONALIZED TYPES OF FARMING IN THE FIFTH DISTRICT OF THE FARM CREDIT ADMINISTRATION



MIXED FARMING
- Atlantic and Gulf Coast Flotwaads
- Miscellaneous City Areas

FRUIT AND MIXED FARMING
- Miscellaneaus Berry and Tree Fruit Areas

COTTON BELT
- Piney Waads of Nartheast Texas
- Southwestern Arkansas and Narthern Lauisiana
- Mississippi-Alobama Clay Hills ond Ralling Uplands
- Southeast Texas-Mississippi Piney Waads-Cottan and Self-sufficing
- Mississippi and Red River Deltas
- Mississippi-Tennessee Brawn Loam Area

COTTON BELT (Cantinued)
- Tennessee River and Limestone Valleys
- Narthern Piedmant
- Sauthern Piedmont
- Gulf Coastol Plain-Cotton and Peanuts

SELF-SUFFICING
- Southern Appalachian Regian

SPECIAL CROPS
- Sugor Cane
- Rice

TRUCK
- Southeastern Truck Regions

012027-1

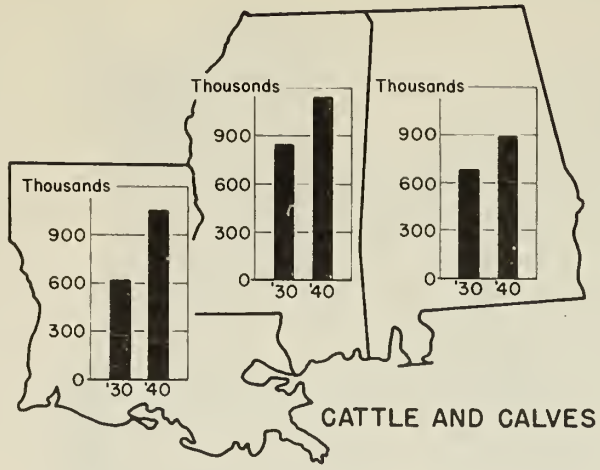
Table 1. - Numbers of livestock and chickens on farms, 1930 and 1940

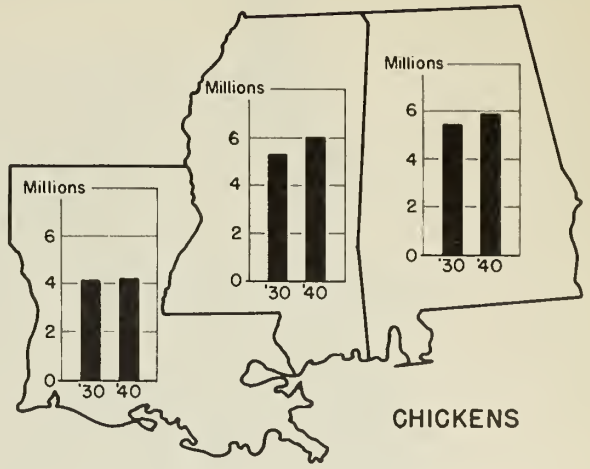
	Alabama		Louisiana		Mississippi		Total for three States	
	1930	1940	1930	1940	1930	1940	1930	1940
Cattle and calves over 3 months old (April 1).....	681,298	889,983	618,503	1,051,901	841,067	1,139,660	2,140,868	3,081,544
All cows and heifers 2 years old and over - kept mainly for milk production (April 1).....	332,045	367,241	223,429	329,824	418,192	522,742	973,666	1,219,807
Hogs and pigs (over 3 months old April 1, 1930; over 4 months old April 1, 1940).....	536,653	752,303	476,766	680,872	480,419	825,909	1,493,838	2,259,084
Chickens (over 3 months old April 1, 1930; over 4 months old April 1, 1940).....	5,428,068	5,951,099	4,133,154	4,181,795	5,381,195	6,055,468	14,942,417	16,188,362

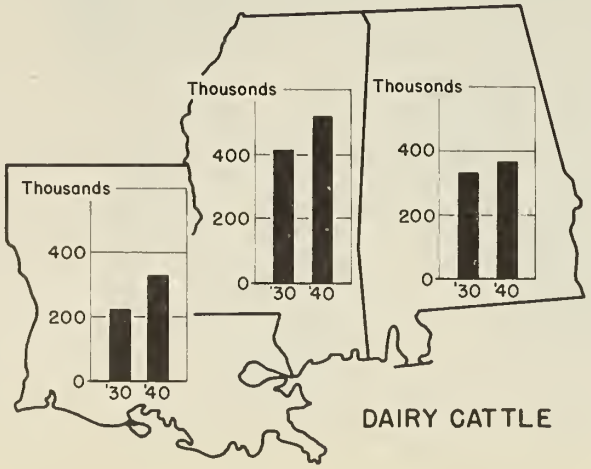
Source: Compiled from U. S. Bureau of the Census data for 1930 and 1940.

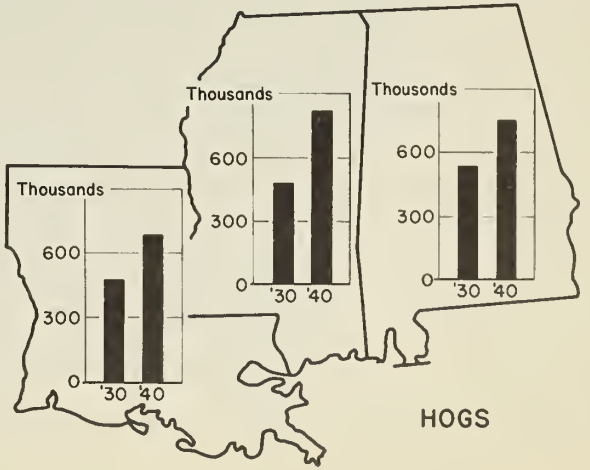
FIGURE 2

LIVESTOCK POPULATION 1930 AND 1940









012027-2

FIGURE 3

CATTLE AND CALVES, OVER THREE MONTHS OLD, APRIL 1, 1940

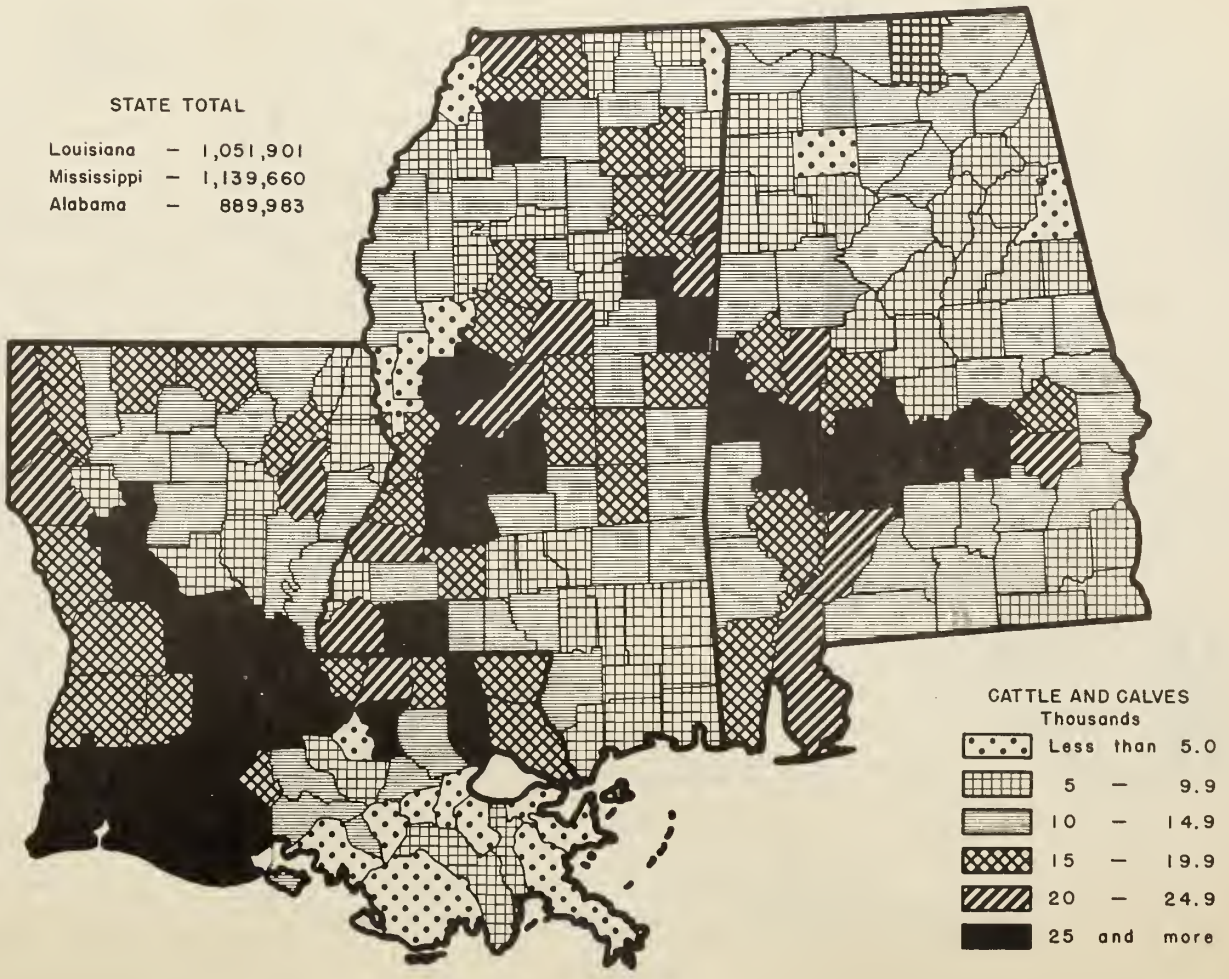
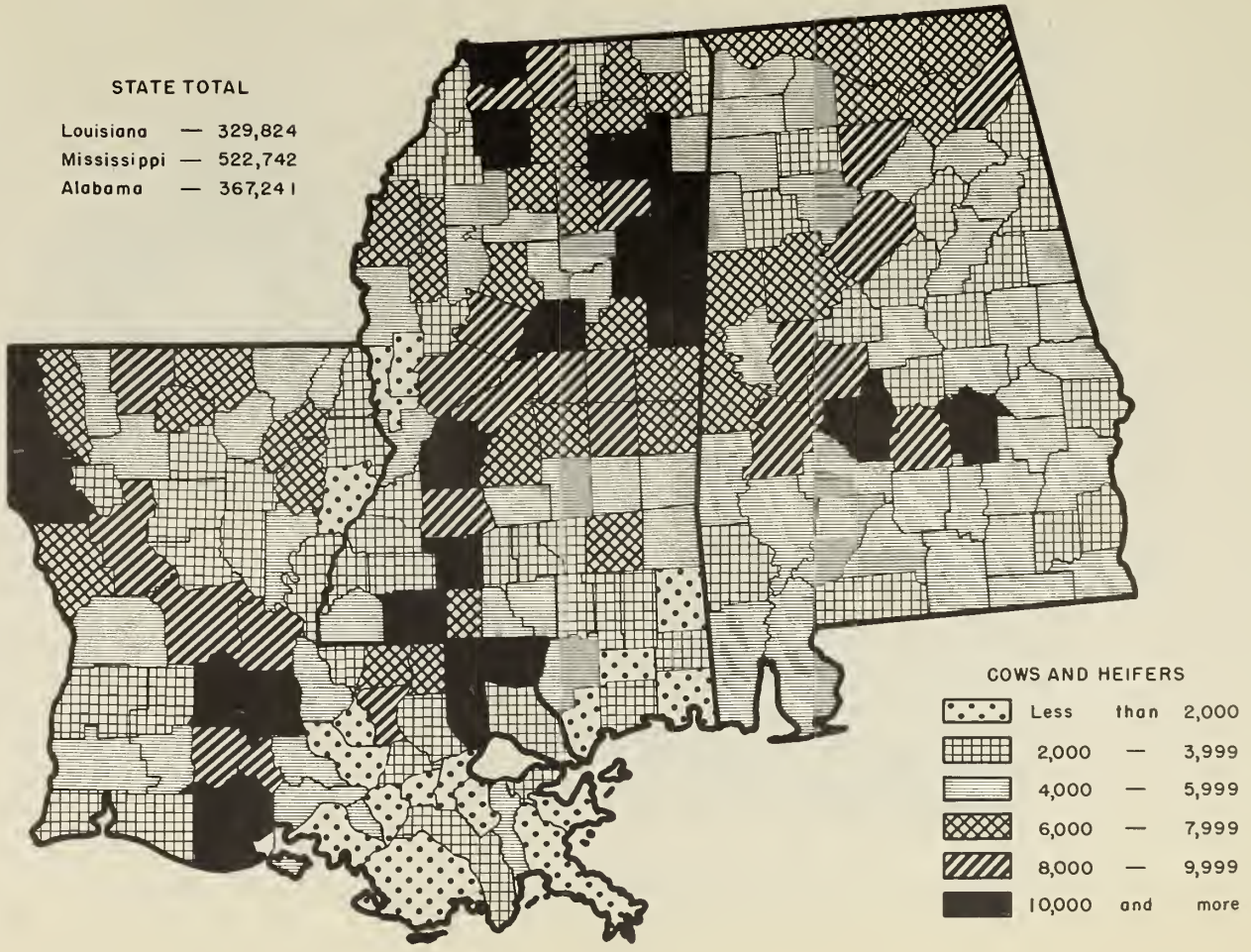


FIGURE 4

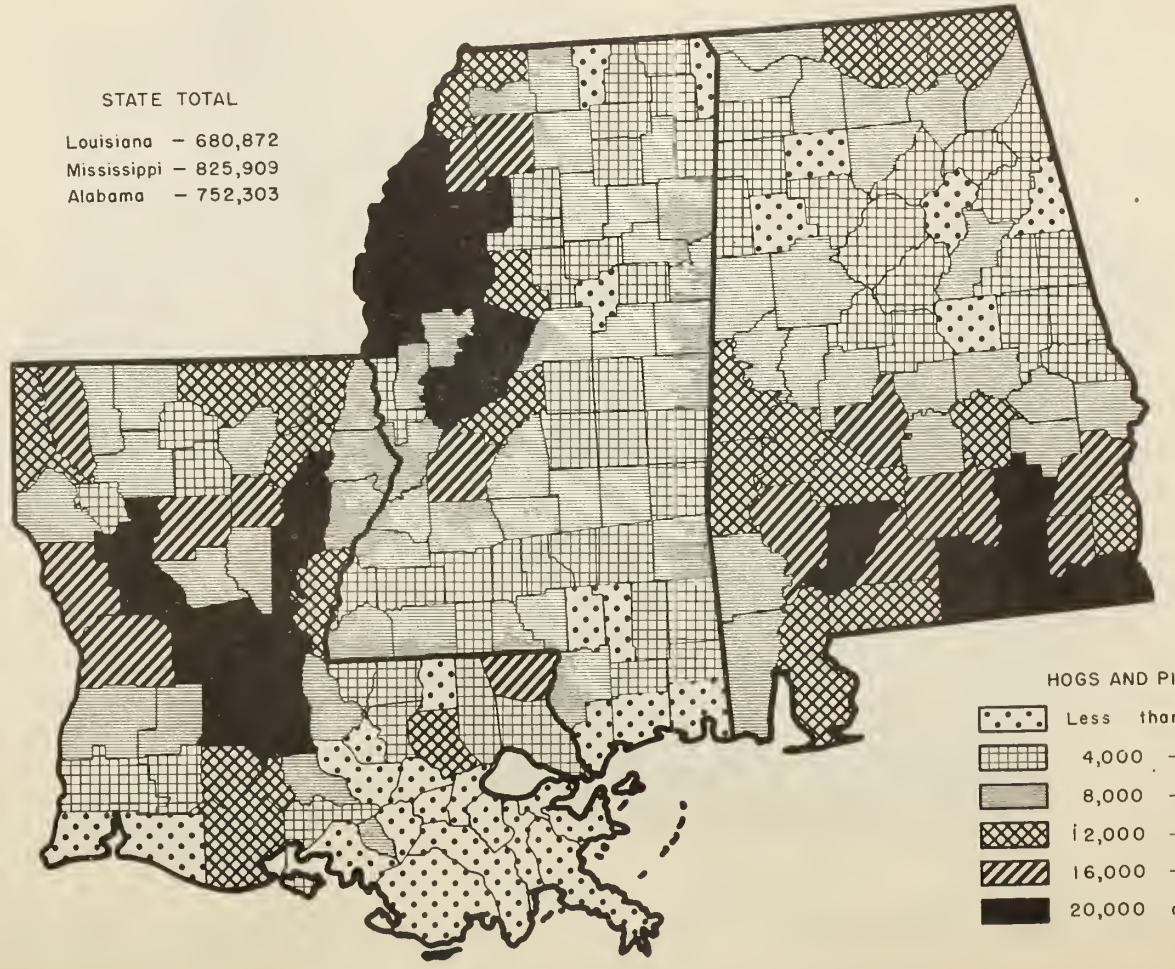
ALL COWS AND HEIFERS, TWO YEARS OLD AND OVER, KEPT MAINLY FOR MILK PRODUCTION, APRIL 1, 1940



012027 - 4

FIGURE 5

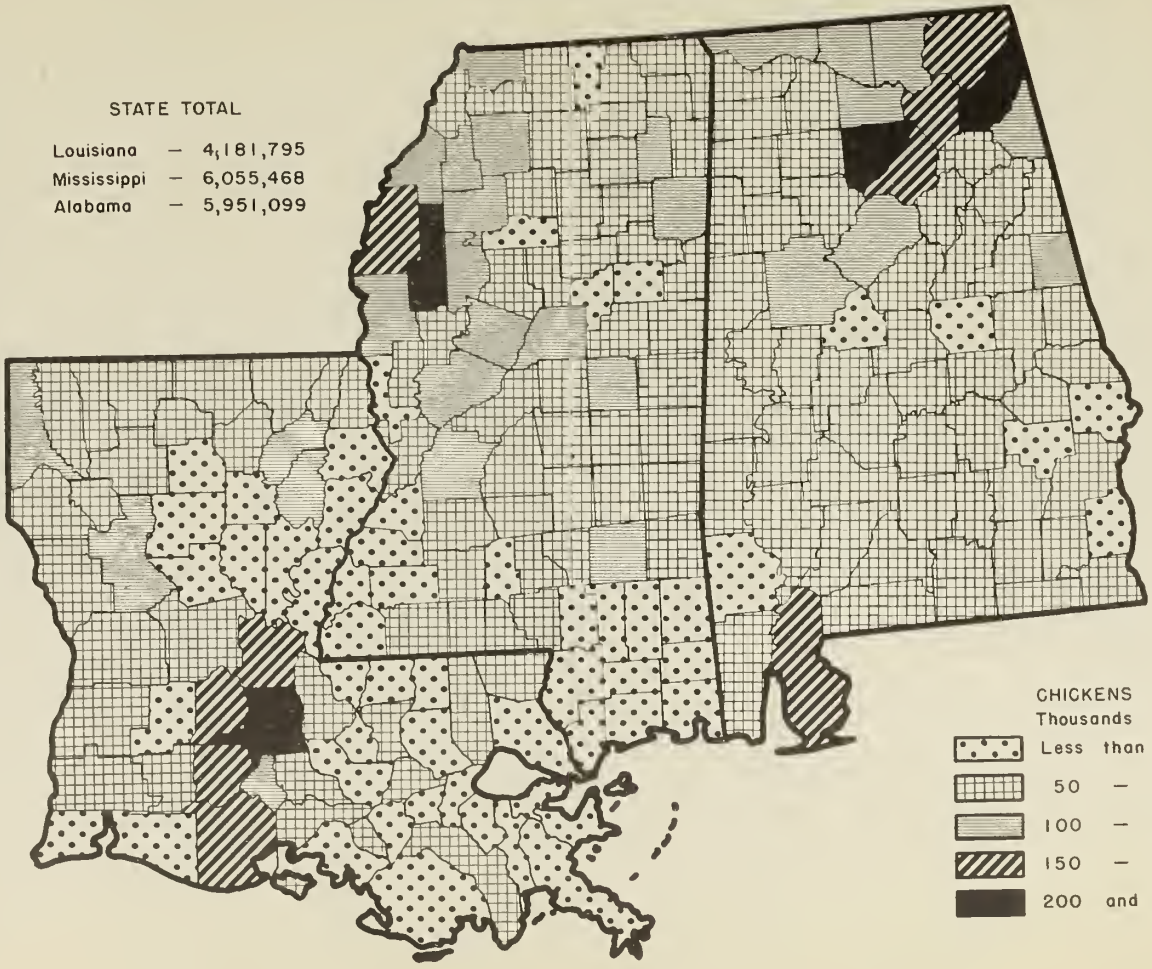
HOGS AND PIGS, OVER FOUR MONTHS OLD, APRIL 1, 1940



012027-5

FIGURE 6

CHICKENS, OVER FOUR MONTHS OLD, APRIL 1, 1940



012027-6

poultry is usually purchased than of those fed either dairy cattle or hogs, so these areas may be expected to provide substantial demands for mixed feeds.

These maps are based on the latest figures available which show the distribution by counties, but estimates by the Bureau of Agricultural Economics of the United States Department of Agriculture indicate material increases in State totals since the 1940 census. Table 2 gives these totals for various dates for the three States included in this study.

Table 2. - Poultry and livestock population, January 1

Kind of stock	Alabama	Louisiana	Mississippi
		Number	
Chickens:			
1930	6,655,000	4,678,000	6,909,000
1940	8,122,000	5,562,000	7,993,000
1943	10,190,000	6,801,000	9,705,000
1944	10,774,000	7,259,000	10,926,000
Hogs, including pigs:			
1930	845,000	637,000	780,000
1940	1,267,000	999,000	1,213,000
1943	1,219,000	807,000	1,170,000
1944	1,560,000	1,205,000	1,369,000
All cattle and calves:			
1930	756,000	684,000	902,000
1940	1,024,000	1,204,000	1,273,000
1943	1,151,000	1,301,000	1,431,000
1944	1,255,000	1,366,000	1,488,000
Cows and heifers, 2 years old and over, kept for milk:			
1930	360,000	240,000	430,000
1940	397,000	335,000	541,000
1943	438,000	342,000	597,000
1944	456,000	345,000	591,000

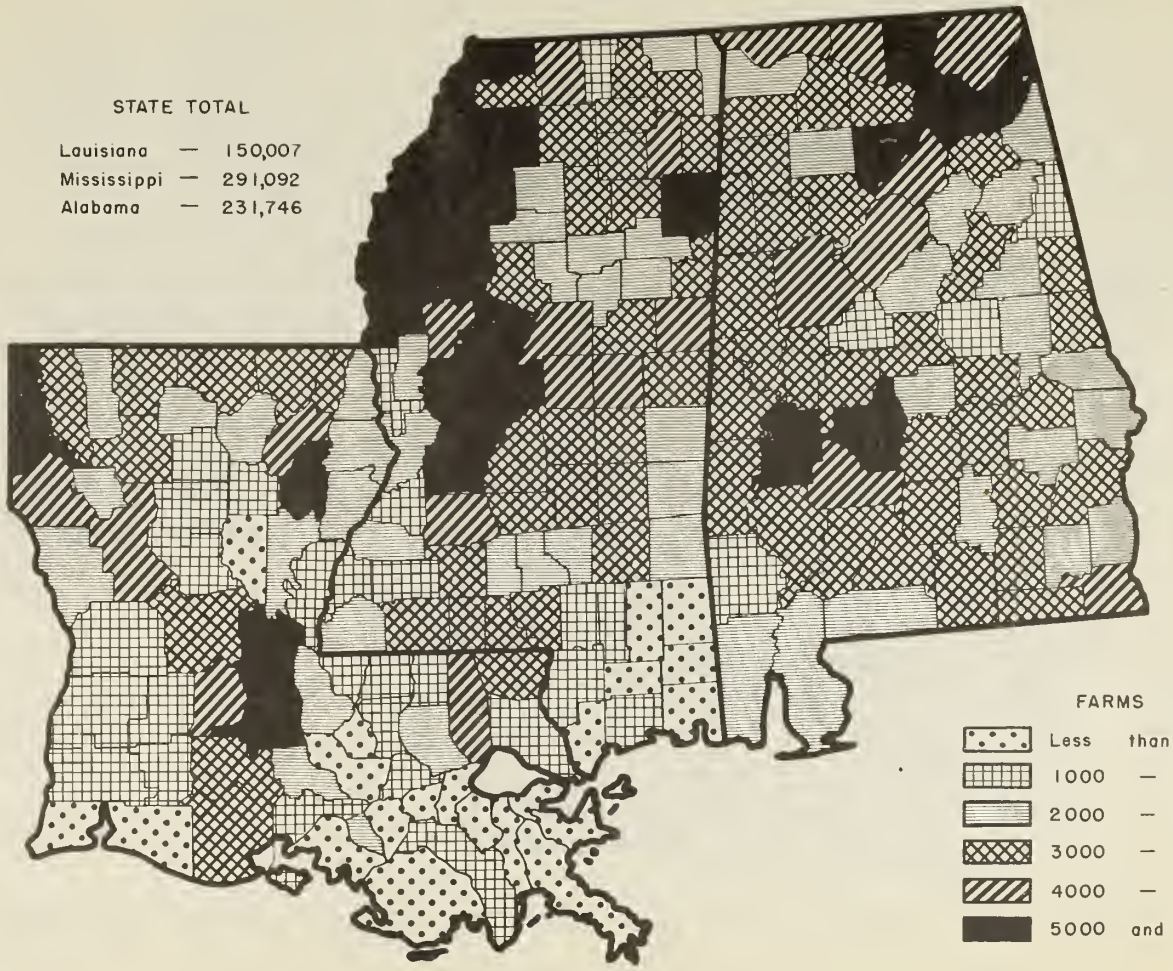
Source: Compiled from reports of the Bureau of Agricultural Economics, United States Department of Agriculture.

FEEDS PURCHASED

The number of farms per county, as shown in figure 7, should be considered in connection with the number of farms reporting the purchase of feed for domestic animals and poultry (figure 8). Figure 9 shows the percentage of the farms in each county which reported buying feed during 1939. The percentage of farms in the Mississippi Delta reporting the purchase of feeds may be somewhat misleading. It appears likely that many small farms here keep no livestock except probably one mule, and purchase no feed, while the smaller number of large farms do have considerable livestock and

FIGURE 7

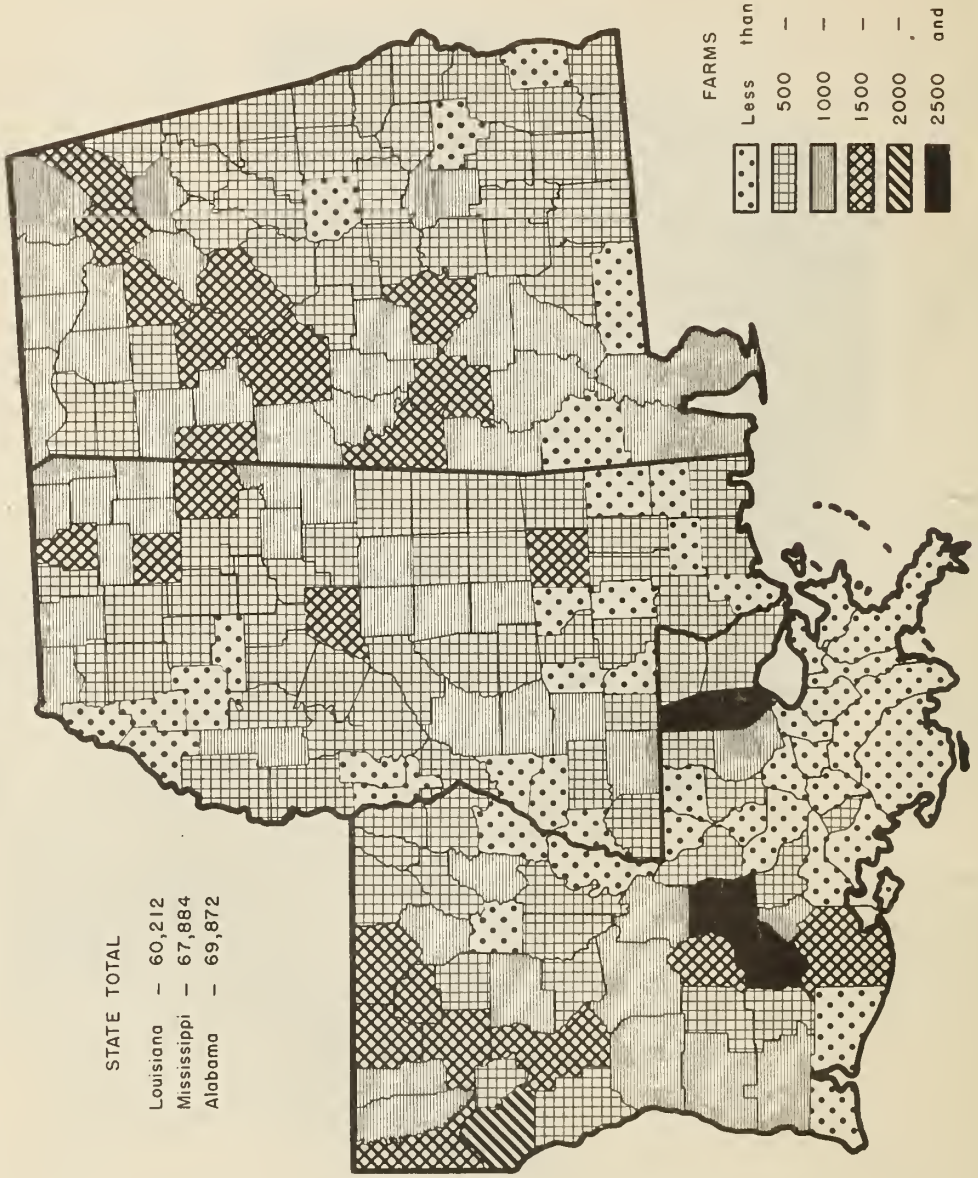
NUMBER OF FARMS, APRIL 1, 1940



012027-7

FIGURE 8

NUMBER OF FARMS BUYING FEED FOR DOMESTIC ANIMALS AND POULTRY, 1939



purchase fairly large quantities of feed. Aside from this, the main significant fact shown in figure 9 is the relatively large percentage of farms in large parts of Louisiana that purchase feeds.

The total cost of feed bought in each county, as reported in the 1940 census appears in figure 10. Totals for the three States are:

Alabama	$5,571,868
Mississippi	4,909,097
Louisiana	5,236,869

The map shows counties making heavy purchases pretty well scattered over the three States. In general they are near cities of some size, but not always.

The average cost of feed bought per farm is shown in figure 11. Six parishes in Louisiana reported the purchase of more than $250 worth of feed per farm. The average for Jefferson Parish was $1,635 and for Orleans Parish, $1,387 per farm. In Mississippi the largest figure is for DeSoto County, which is tributary to Memphis, Tennessee. The average here was $340 per farm. In Alabama, Mobile County reported an average of $300 per farm and Montgomery County, $316 per farm. These figures are affected by the size of farm, the numbers of livestock and poultry kept, and the proportion of the feed required which is produced on the reporting farm.

The above data refer to the purchase of all kinds of feeds. In many instances they would include hay, grain, and cottonseed meal or hulls bought from nearby farmers or oil mills, which would not enter into volume calculations for a cooperative feed association.

Figures are not available to show the quantities of mixed feeds sold in individual counties, but the following information supplied by the commissioners of the State departments of agriculture shows the volume of feeds registered and under control through State feed laws that was sold in the respective States.

Table 3. - Sales of registered feeds in Alabama, Louisiana, and Mississippi, 1938-43

Year	Alabama	Louisiana	Mississippi	Total
	October 1 to September 30	September 1 to August 31	January 1 to December 31	
	Tons			
1938	322,465	238,797	114,085	675,347
1939	332,962	280,251	141,840	755,053
1940	357,127	301,121	165,065	823,313
1941	367,262	306,623	157,890	831,775
1942	404,197	351,750	205,597	961,544
1943	679,872	513,824	337,200	1,530,896

Figured at an average retail price of $60 per ton or $3 per 100-pound bag, this would represent feed purchases of over $90,000,000 in the three States during 1943. The 755,053 tons reported for these three States for 1939 would, at an average price of

FIGURE 9

PERCENTAGE OF ALL FARMS BUYING FEED FOR DOMESTIC ANIMALS AND POULTRY, 1939

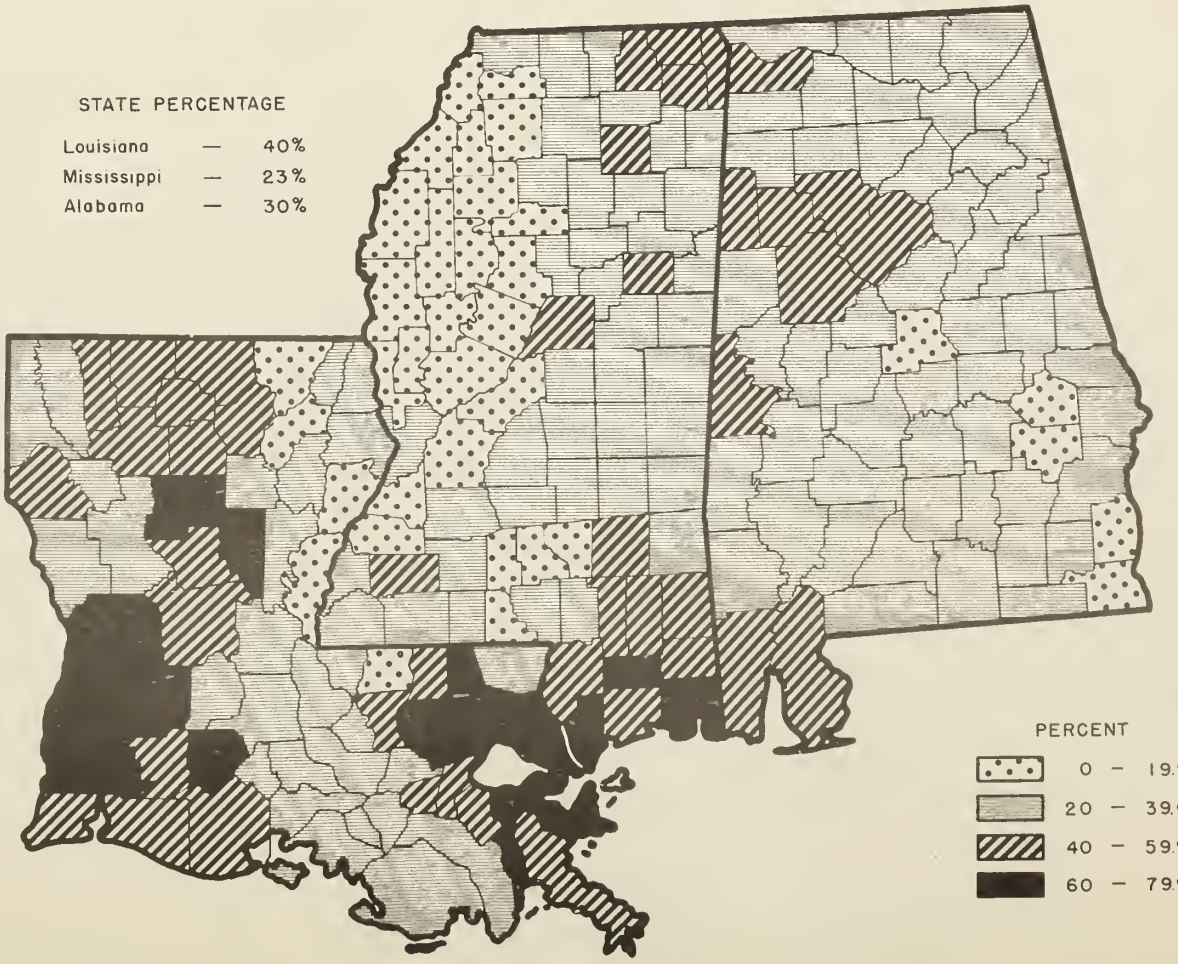


FIGURE 10

AMOUNT OF FEED BOUGHT, 1939

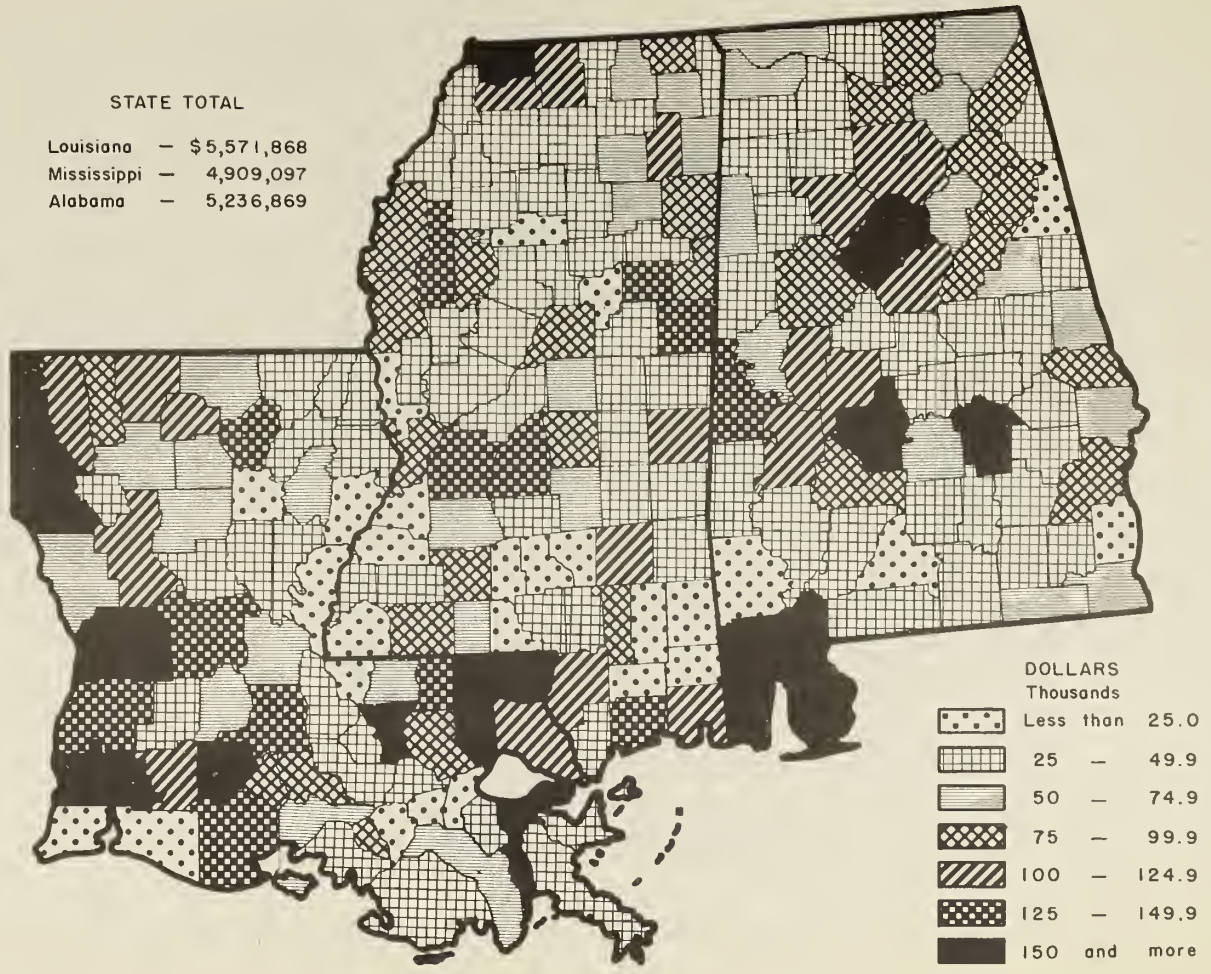
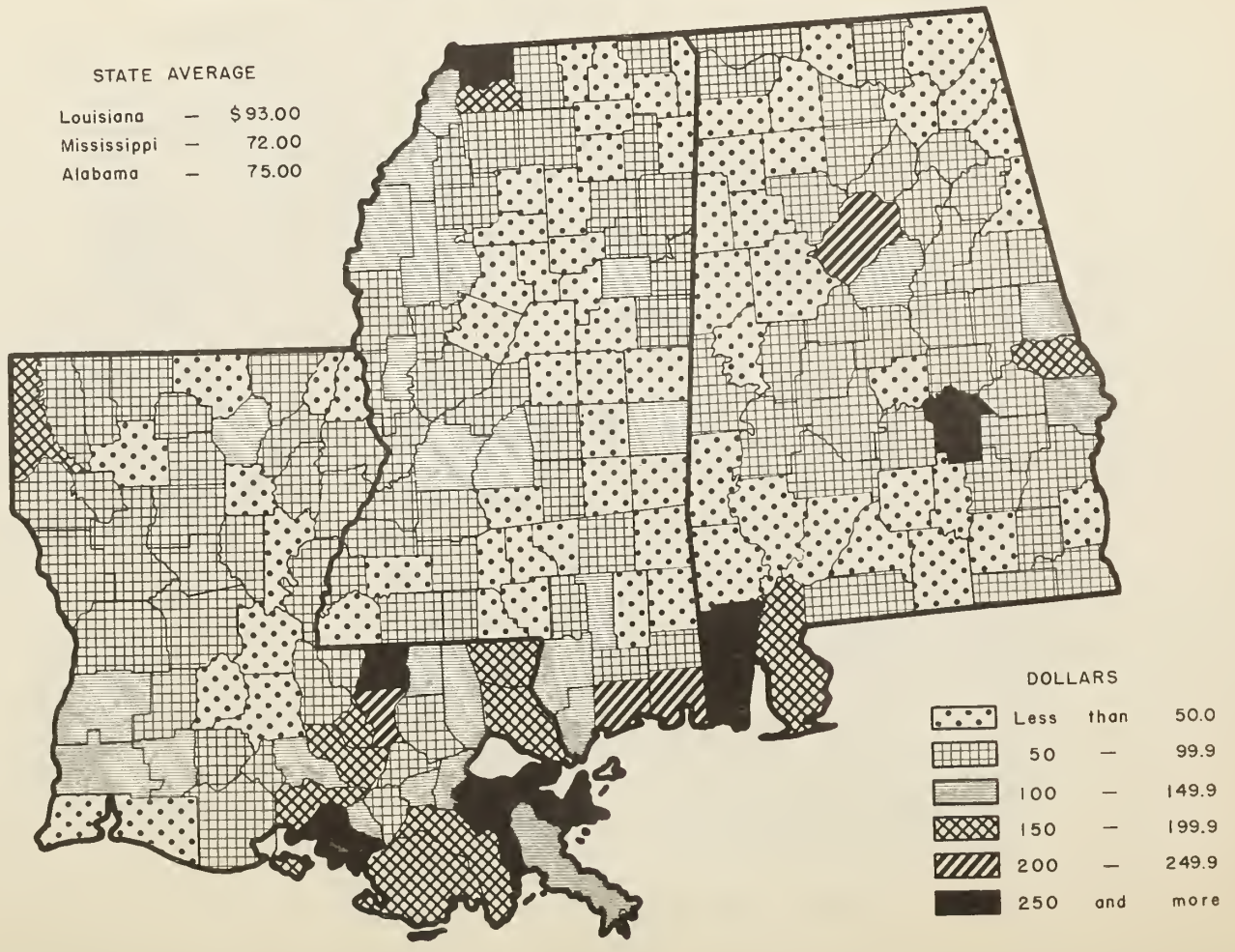


FIGURE 11

AVERAGE AMOUNT OF FEED BOUGHT PER FARM, 1939



$40 per ton, represent a sales volume of $30,202,120. Since the total reported in the 1940 census for feed purchases in these same States in 1939 was only $15,717,834 (which as stated above would include hay, grain, and some other products) it seems that farmers failed to recall their total feed purchases when making replies to census enumerators. The census figures would not include feed purchased by residents of towns and cities but such purchases would probably be more than offset by the hay, grain, and other feeds purchased by farmers. A steady increase over the entire period is apparent.

A large proportion of this feed is shipped into these States from mills in Texas; at Memphis, Tennessee; and at points in Missouri. Some of the mixed feed represented is distributed by cooperative associations, but most of it is sold by private feed stores or through warehouses or local retail stores operated by the feed mills.

In a survey of feed distribution made by the United States Department of Agriculture[1] late in 1943, data were obtained from 578 mills manufacturing commercial mixed feeds. It was estimated that these mills produced 65 percent of the total mixed feed manufactured in the United States, exclusive of custom mixing. The report from the survey shows the following quantities of mixed feeds produced by these mills as used during 1942 in the three States of the Fifth Farm Credit District, as follows: Alabama, 242,000 tons; Louisiana, 176,000 tons; Mississippi, 139,000 tons; making a total of 557,000 tons. If we assume that the coverage for these three States is the same as that estimated for the country as a whole, this would indicate that approximately 850,000 tons of commercial mixed feeds were used in these States during 1942. It should be kept in mind that these figures cover only mixed feeds, and do not include feeding materials such as cottonseed meal, soybean meal, tankage, gluten feed, dried citrus or beet pulp, mill feeds, ground straight grains, and so forth. The figures for sales of registered feeds, shown on page 13, include both mixed feeds and these unmixed feed ingredients except straight grains.

COOPERATIVE PURCHASING

The number of farmers buying through cooperative associations in each county, as reported in the 1940 census, is shown in figure 12. No cooperative buying was reported in Perry County, Mississippi, or Cameron Parish, Louisiana. Counties in which a fairly large number of farmers buy supplies cooperatively are widely scattered throughout the three States.

Figure 13 shows the percentage of the total number of farms in each county that reported buying through cooperatives. Livingston Parish, Louisiana, was the highest, with 48.5 percent. In a surprisingly large number of the counties in each of the States, less than 10 percent of the farmers reported any cooperative buying. The main significance of these figures appears to be the extent of variation in different counties, and the lack of development of cooperative purchasing in large areas in these States.

In some counties where large numbers of farmers reported cooperative buying, there may have been some confusion as to the exact meaning of the question. There was also

[1] Jennings, R. D., and Earp, W. S. The Production and Distribution of Specified Feed Ingredients and of Commercial Mixed Feeds, 1941-1943. United States Department of Agriculture, Agricultural Adjustment Administration. Processed. 66 pp. 1943.

FIGURE 12

NUMBER OF FARMS REPORTING BUYING THROUGH COOPERATIVES, 1939

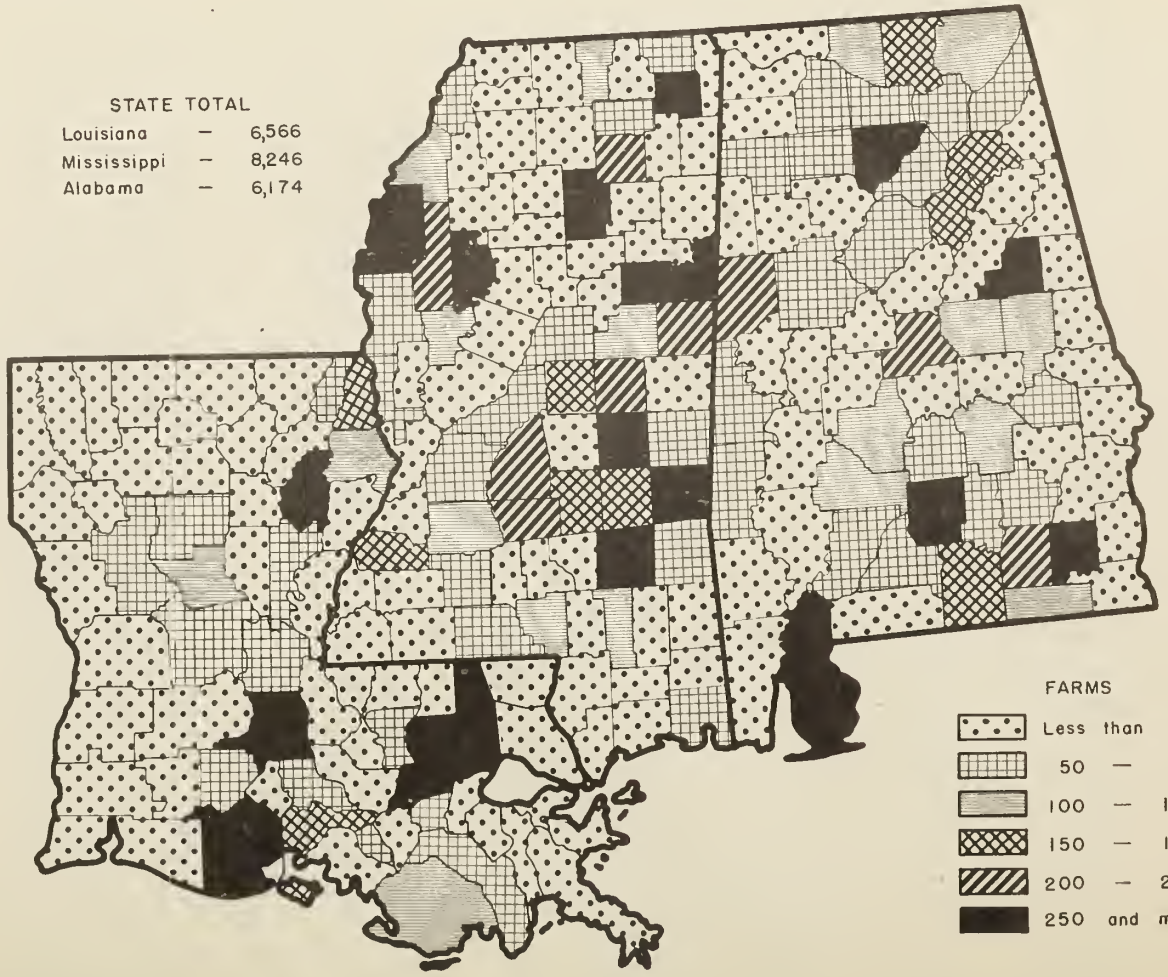
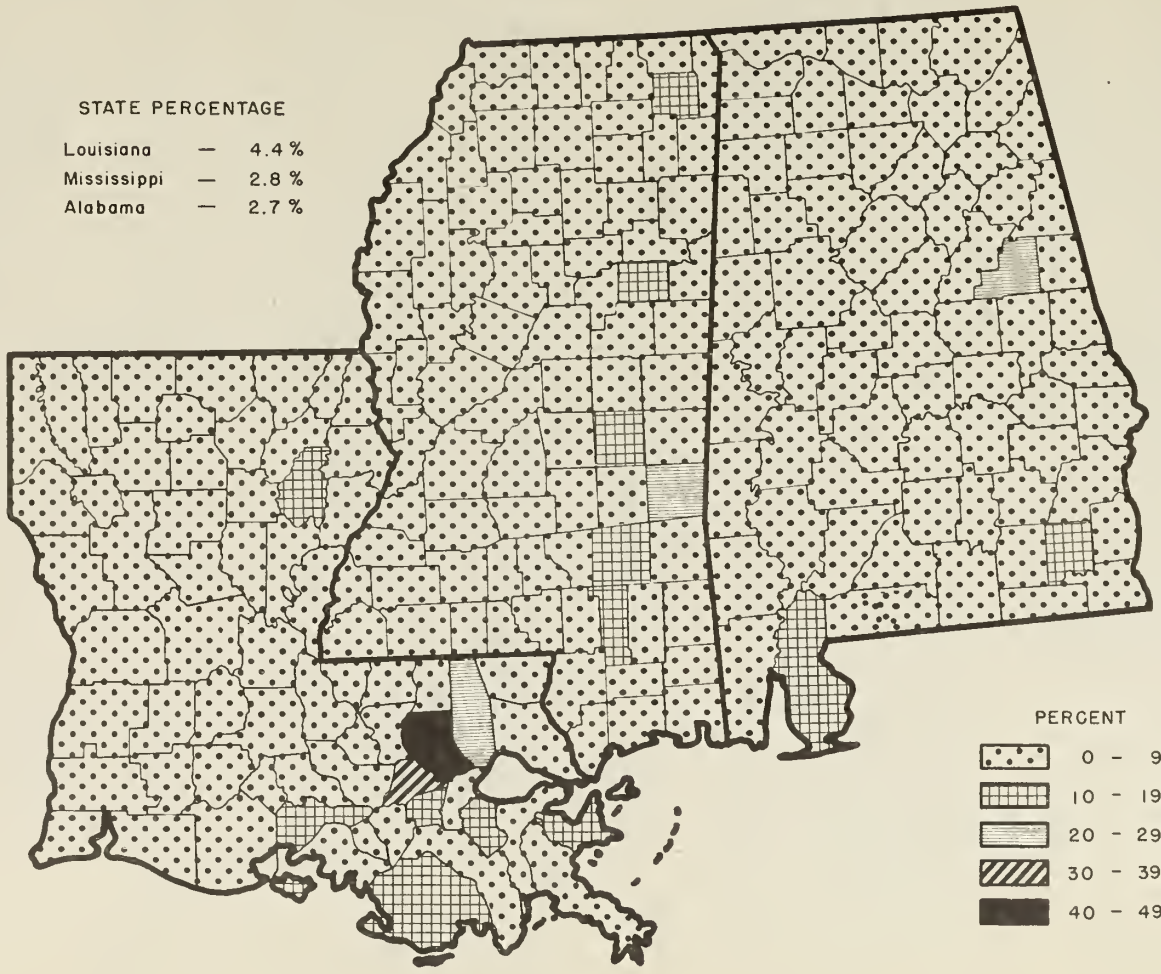


FIGURE 13

PERCENTAGE OF FARMS REPORTING BUYING THROUGH COOPERATIVES, 1939



a question on the census schedule as to business done through cooperative service organizations, such as electric service cooperatives, mutual fire insurance and telephone companies, truck routes, and spray rings. It appears that some farmers may have reported these services also under cooperative buying. For instance, Baldwin and Butler Counties, Alabama, both show the number of farmers buying cooperatively as identical with the number obtaining these services cooperatively.

It should be remembered that there has been considerable expansion in cooperative purchasing in these States since the 1940 census was taken and that the number and percentage of farmers now purchasing some farm supplies through cooperative associations would be somewhat larger than was then reported.

APPRAISAL OF COOPERATIVES NOW HANDLING FEED

Several cooperative associations are now handling feed in the three States of the Fifth District and several others might well consider doing so. Some of these associations are considered briefly here. As already stated, none of the associations in the Fifth District are now manufacturing feeds except a few on a local basis. One association, located in Georgia but having a large part of its membership in Alabama, which does have a feed mill has been included in this study. A brief description of the present activities of these associations is given, together with some suggestions as to how they might expand into feed manufacturing. Location of their main offices is shown in figure 14.

FARMERS MARKETING AND EXCHANGE ASSOCIATION
MONTGOMERY, ALABAMA

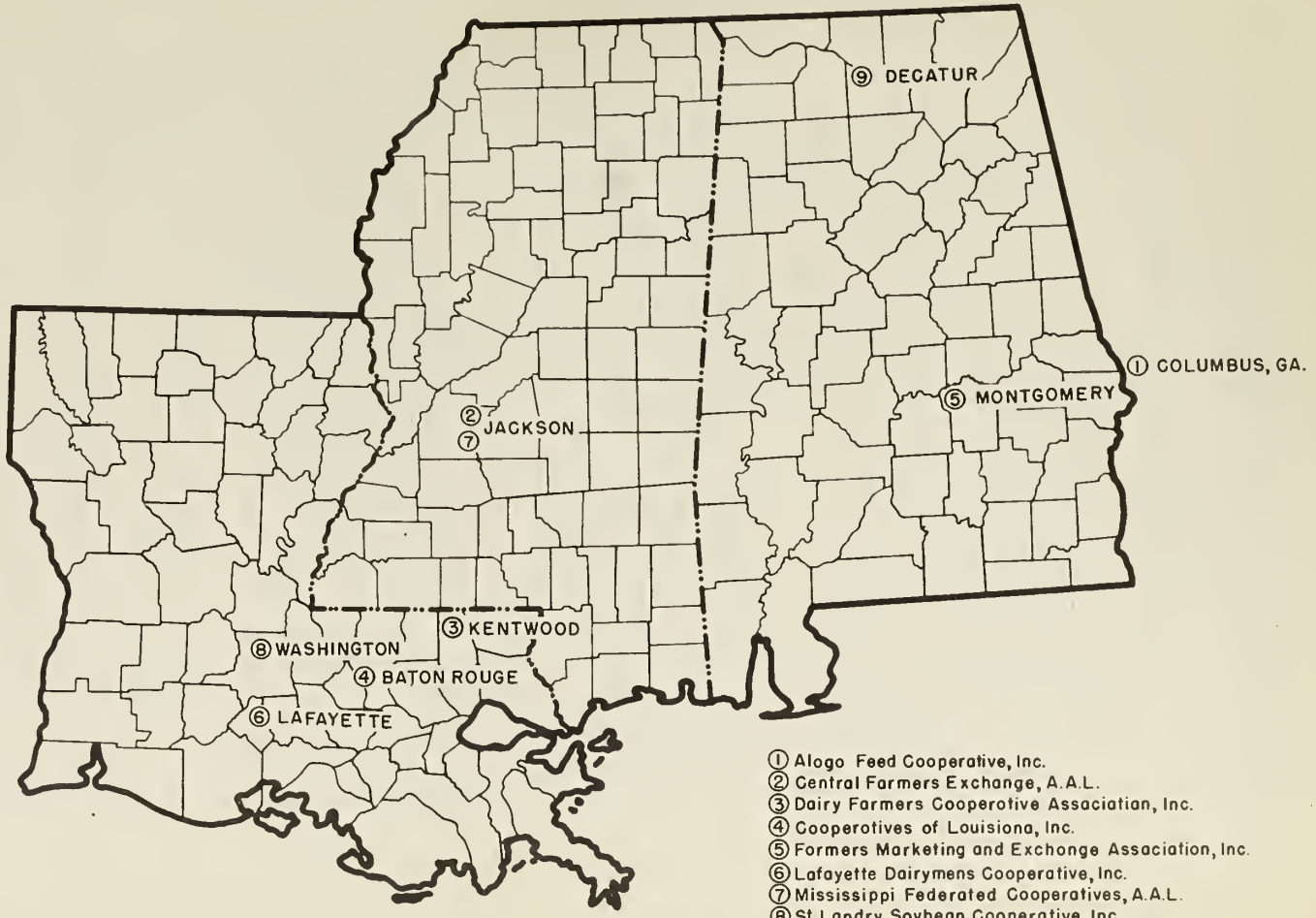
This association was formed in 1932 as a reorganization of one started in 1925. It deals in fertilizer and fertilizer materials, seeds, feed, and miscellaneous farm supplies. Distribution is through 32 separately organized county exchanges, 5 non-affiliated cooperatives, 6 dealer agents, and 5 branches which were formerly county exchanges but which had been taken over by the State association. It is agreed that the local organizations may later take these over again when they desire and are in financial condition to do so. Most of the distribution points are in northern and eastern Alabama as shown by the accompanying map (figure 15). The products handled by the State association find their way to some 50,000 farmers. Each patron signs a membership card and pays $1 membership fee either in cash or from patronage dividends.

Balance sheet as of June 30, 1943, shows a current ratio of 2.5 to 1.0. Members' equity of $150,902 was equal to 60 percent of total assets. Net savings for 1942-43 were $53,989.11. Products distributed during the year ended June 30, 1943, were as follows:

Products	Value
Fertilizer	$281,663.65
Basic slag	398,219.39
Peas and vetch	115,165.28
Other seeds	180,510.79
Inoculation	16,797.34
Miscellaneous (about 1/3 feeds)	266,691.52
Total	$1,259,047.97

FIGURE 14

LOCATION OF COOPERATIVES SURVEYED FOR THIS STUDY



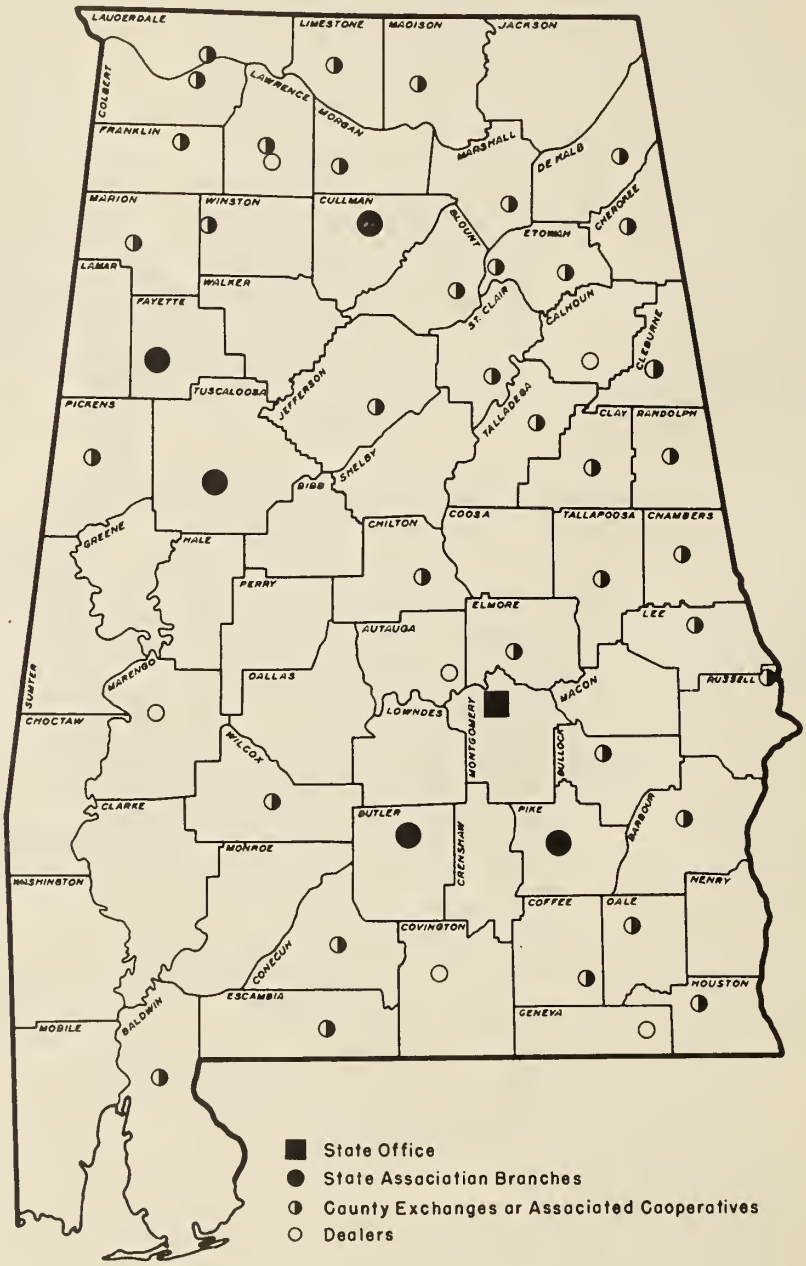
① Alogo Feed Cooperative, Inc.
② Central Farmers Exchange, A.A.L.
③ Dairy Farmers Cooperotive Assaciatian, Inc.
④ Cooperotives of Louisiona, Inc.
⑤ Formers Marketing and Exchonge Assaciation, Inc.
⑥ Lafayette Dairymens Cooperative, Inc.
⑦ Mississippi Federated Cooperatives, A.A.L.
⑧ St. Landry Soybean Cooperative, Inc.
⑨ Tennessee Valley Fertilizer Coaperative, Inc.

013330-14

FIGURE 15

FARMERS MARKETING AND EXCHANGE ASSOCIATION
MONTGOMERY, ALABAMA

MEMBERS, DEALERS, AND BRANCHES



013330-16

The association has the State franchise for distributing feed of one of the large national feed milling organizations. Feeds are shipped direct to the local distribution points by the mill; usually in straight or mixed cars to one point, but in some cases in pool cars to two or more points. The mill bills the State exchange which always takes the cash discount. Shipments are with sight draft attached to bill of lading, payable by the local to the State exchange. Sales to patrons by the locals are practically on a cash basis, with some short-term credit to patrons who have established financial responsibility. Feed sales have been at the rate of about 1,700 tons per year.

Some of the locals have small feed grinding and mixing equipment which is used largely for custom work. None mix feeds for sale under their own brands. The principal competition is from feed stores handling the lines of large out-of-State mills.

The management believes that the larger savings in handling feed, as well as in many other farm supplies, are to be obtained from manufacturing. This has been its experience with fertilizers. If the association were to prepare a dependable line of high quality feeds in a mill located so as to take full advantage of favorable transportation rates and privileges, it appears that its volume of feed sales could be greatly increased.

This association and several of its member county exchanges have an interest in the Tennessee Valley Fertilizer Cooperative at Decatur, Alabama. Since most of Alabama consists of deficit areas, so far as production of grain to meet feeding requirements is concerned, and since most of the grain used comes from Midwestern States, it appears that a feed mill somewhere on the Tennessee River - probably at Decatur - would be in position to obtain ingredients, manufacture feeds, and ship them on to most of the county exchanges under favorable total freight costs.

TENNESSEE VALLEY FERTILIZER COOPERATIVE, DECATUR, ALABAMA

This association was organized in 1936 by a group of leading farmers living in the northern part of Alabama in the valley of the Tennessee River. After some experience in having fertilizers manufactured at a Decatur plant under a tonnage lease, they purchased the plant and, as the business grew, built a larger plant in 1941. While the main activity has been in fertilizer, the association purchases fencing and other steel products and inoculation materials and also handles seeds such as cotton and winter legumes. It is now investigating the possibilities in feed manufacturing.

Membership is limited to cooperative associations and is evidenced by ownership of one share of common, voting stock having a par value of $100. There is also noncumulative 5 percent preferred stock, of $10 par value, which has been sold to cooperative associations for financing purposes. The initial membership consisted of 10 county cooperatives and the Farmers Marketing and Exchange Association.

In 1939 it developed that some of the county associations were not operated as true cooperatives under the law so they were eliminated from membership. They continue to obtain fertilizer from the association and are treated as members in every way except that they have no voting rights. Membership now consists of seven county exchanges. The association has offered to repurchase the outstanding preferred stock but only a small amount has been presented for redemption. About 2,500 farms now obtain fertilizer from the association through their county exchanges. Sales to the county exchanges are for cash in all cases.

Savings for the year ended June 30, 1944, on 9,432 tons of mixed fertilizer and 3,625 tons of fertilizer materials, were distributed as follows:

5 percent dividend on preferred stock	$580.00
Cash dividend of 75 cents per ton on mixed goods to county exchanges	7,074.30
Cash dividend of $2 per ton on mixed goods to farmers	18,864.80
Added to equity reserve	24,296.26
Total	$50,815.36

Total reserves accumulated now amount to $108,723.98. The association has paid out over $120,000 in cash patronage dividends and invested $60,000 in its plants. The dividend checks to farmers are made out jointly to them and to their county exchanges and are distributed by the county exchange. This distribution serves to tie the county organization into the fertilizer deal, in the mind of the farmer, and also permits collection of accounts receivable from this source by the county exchange if this should be necessary.

The association manufactures a competitive line for the price buyers, but the main part of its volume is in its high quality line and the percentage of sales of top-grade goods is constantly increasing.

The association has a sharp seasonal peak of operations in March, April, and the first half of May, with about 10 percent of the annual volume - mostly materials - in the fall. The other supplies now handled tend to smooth out seasonal operations. The association would be interested in manufacturing feeds so as to further distribute its overhead costs whenever it is convinced that it can do so advantageously and provide a worth-while service to its farmer-patrons. Most of the business would be in poultry feeds. Poultry population is especially heavy in the Sand Mountain counties of northeastern Alabama. While there are fairly large numbers of dairy and other cattle in northern Alabama, pasturage is good and the season long. A carefully planned rotation of leguminous pasturage provides excellent feed almost the year around. During the short feeding periods, cattle are fed on roughage and cottonseed meal and very little mixed feed is purchased for this purpose.

Privately-owned flour and feed mills at Decatur and Chattanooga are reported to have been able to dominate their markets because of economies effected in transportation through bringing in their raw materials via barge on the Tennessee River from the grain centers of the Middle West. If sufficient coordination of operations can be effected, cooperatives of this area should have sufficient volume of feed distribution to take advantage of these same savings.

ALAGA FEED COOPERATIVE, INC., COLUMBUS, GEORGIA

This association was organized in May 1943 and started operations on August 1. It is not affiliated with any other cooperative but was organized by dairy farmers who are also members of the Wells Dairy Cooperative at Columbus. It now has 40 members and is not adding any more until the mill capacity is increased so as to be able to handle additional business. It also handles milk bottles and a few other dairy supplies but the main part of its volume is dairy feeds. No feeds for poultry or other kinds of livestock are made at the present time. About half of the members live in Alabama and half in Georgia, most of them within 20 miles of the plant.

The association is financed through the sale of capital stock. Each member takes out one share of common stock at $5 for each cow milked. There is $16,470 of this stock outstanding. There has also been $10,550 of preferred stock sold to provide the necessary financing. Patronage dividends will be paid in revolving fund certificates and, when sufficient capital has thus been accumulated, the preferred stock will be retired and the oldest revolving fund certificates will be paid.

An operating statement for the period August 1, 1943, to June 30, 1944, is summarized as follows:

Purchases by patrons	$259,789.88
Cost of materials	207,911.28
Gross margin	51,878.60
Operating expenses	28,223.76
Other income	411.51
Other deductions	1,579.26
Net savings	$22,487.09

During this period the mill turned out 3,890.7 tons of feed, which makes the net savings $5.78 per ton. To meet the requirements of its members, the mill has recently been enlarged by the addition of a two-story and basement warehouse section, 38 x 60 feet, and a mill section, 38 x 16 feet. By separating these with an approved fire wall, the insurance costs are reduced materially. New equipment includes a 75 hp. hammer mill, an additional dry-feed mixer, and a high pressure molasses mixer having a capacity of 4 tons per hour. There is storage for one car of molasses and this will be doubled. When materials are available, a drag belt will be installed to facilitate the handling of sacked ingredients and feeds.

Only dairy feeds are being made. The principal ingredients are peanut hay and snapped corn with cottonseed meal and molasses. Soybean meal, distillers grain, gluten feed, and other materials are used as available. Peanut skins from a local peanut processing plant are used in place of bran. These are high in protein and oil and make a desirable ingredient.

The association hopes to acquire a warehouse in the peanut growing section of south Georgia so it can buy and store there a season's supply of peanut hay at threshing time.

Competition consists of one small local feed mixer and several feed stores handling various brands of commercial mixed feeds. Prices are maintained at the levels followed by these dealers. Feed bills are payable monthly and there has been no trouble with collections. Through the close connections with the dairy associations, the feed cooperative has a good check on the financial capacity of members.

The association is taking full advantage of locally produced feed ingredients and furnishing a very desirable service to its members. As the business expands it may wish to increase its line of feeds and might find it advantageous to obtain certain mixed feeds from a large cooperative mill located so as to be able to ship to Columbus on favorable freight rates.

MISSISSIPPI FEDERATED COOPERATIVES, A.A.L., JACKSON, MISSISSIPPI

Mississippi Federated Cooperatives, A.A.L., grew out of the wholesale purchasing service of the Mississippi Farm Bureau Federation, started about 1922. This association was reorganized in 1930 and its name was changed to the present form in 1935.

The association distributes fertilizer, feed, seed, and miscellaneous farm supplies to 31 county organizations of which 7 are operated as branches of the State association. The location of these county associations is shown in figure 16. It also sells cotton and handled 88,469 bales from the 1943 crop. The total number of farmers served is about 40,000, located mainly in the north, east, and central parts of the State. This association does not have county exchanges organized in the Delta but supplies many individual members there direct.

Balance sheet as of June 15, 1944, shows a current ratio of 2.6 to 1.0. Members' equity was $334,803.16, which was equal to 59 percent of the total assets.

Volume of the purchasing operations and total net savings for both purchasing and marketing activities for several years are shown in table 4.

Table 4. - Volume of business and net savings of Mississippi Federated Cooperatives, A.A.L., Jackson, Mississippi, 1938-44

Year ended June 15	Volume	Net savings
1938	$732,695.70	$11,768.99
1939	868,524.34	17,892.80
1940	818,339.67	22,959.83
1941	773,535.45	37,628.06
1942	1,061,947.51	75,519.69
1943	1,199,044.03	101,318.70
1944	1,316,902.34	99,179.87

The volume figures do not include the cotton handled, which had a value of $8,951,-868.06 for the 1943 crop.

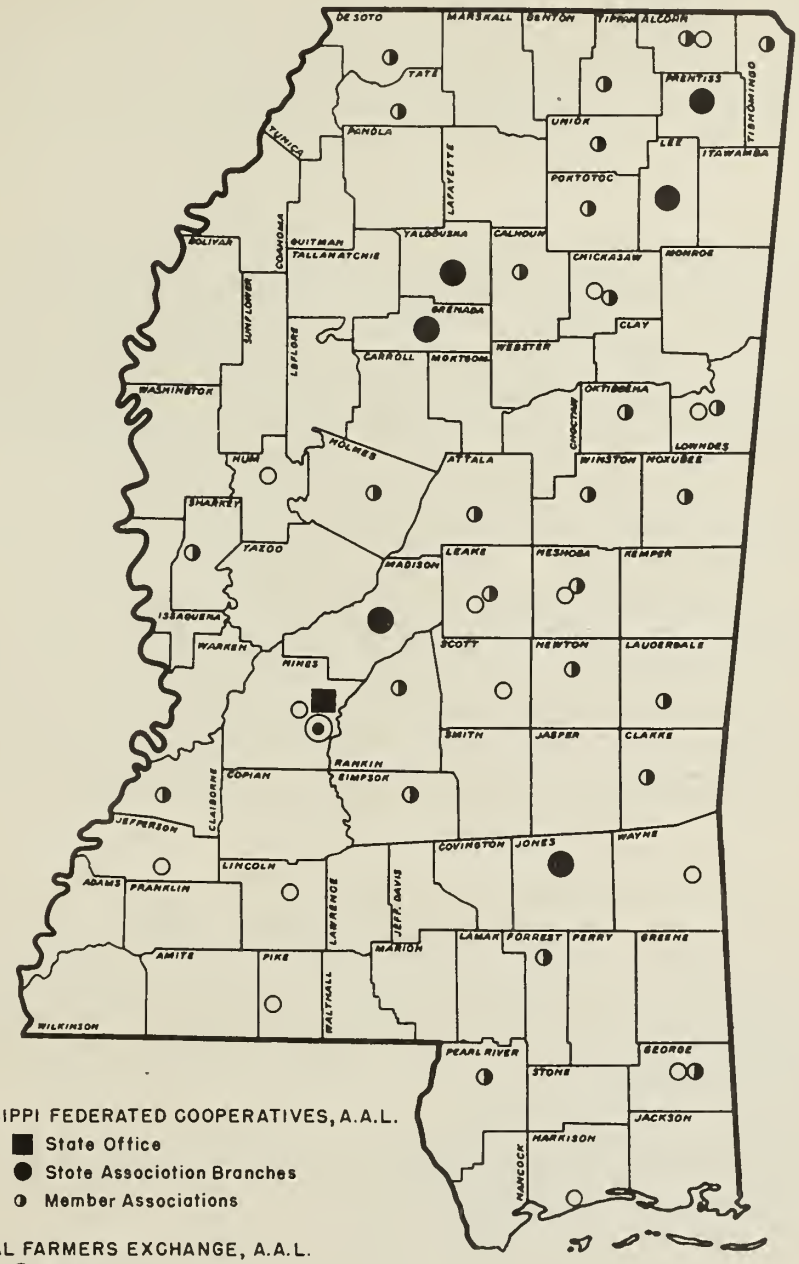
Supplies distributed by the seven branches for the 10½ months ended May 31, 1944, amounted to $811,794.62 and these branches marketed various farm products to the amount of $129,300.80. Feed volume of all the county units for the year ended June 15, 1943, was $350,643.84 on which gross margins amounting to $27,179.85, or 7.8 percent, were retained. Total feed volume for all units for the 10½ months ended May 31, 1944, was close to a million dollars.

Feeds are purchased from commercial mills located at Memphis and Meridian. The mills bill the feeds direct to the local and the State association guarantees these accounts. The State association receives the regular brokerage fee and cash discount on this feed. The mills do considerable promotional and service work in the field. At points where these mills have other dealers, feeds supplied the cooperatives are packed under the State association's "Red Clover" and "Green Clover" brands. At other points the mills' regular advertised brands are used. The association does not specify or control the formulas used.

Purchased feeds are used in this area to supplement home-grown grain and roughage. Practically all of the ingredients used in mixed feeds can be purchased more advantageously from other parts of the country. If the association were to go into feed milling, location of the mill so as to take full advantage of transportation rates and privileges would be a large factor to be considered. A river location would appear to have many advantages. With an extensive distribution system of county exchanges already operating and handling about 17,000 tons of feed a year, it seems

FIGURE 16

COOPERATIVE FARM SUPPLY DISTRIBUTION IN MISSISSIPPI



MISSISSIPPI FEDERATED COOPERATIVES, A.A.L.

- ■ State Office
- ● Stote Associotion Branches
- ◑ Member Associations

CENTRAL FARMERS EXCHANGE, A.A.L.

- ⊙ Stote Office
- ○ Feed Warehouses

The Exchonge hos locol ossociotions in each county in the state but only those shown hove octive warehouses.

013330-15

that this association is in an excellent position to benefit from the operation of a modern feed mill.

CENTRAL FARMERS EXCHANGE, A.A.L., JACKSON, MISSISSIPPI

This association was formed in 1941, as a federation of county local associations with membership made up largely of clients of the Farm Security Administration. There are 82 county member associations. Total membership of these locals is about 25,000 with around 19,000 active members. There is a life membership fee of $1 and each member buys for cash or from accumulated patronage dividends at least one revolving fund certificate having a value of $10. Only operating farmers are eligible for membership.

The locals deposit the money received from these revolving fund certificates with the State association or purchase similar certificates of the Central with these funds. Such funds are available to the locals for financing facilities. The local that wishes to provide a warehouse for its operations must finance at least 25 percent of the cost. The balance required is supplied by the State association. Sixty-two of the locals have some storage space and 14 of these are active distributing warehouses where employees of the locals receive produce for marketing and carry farm supplies for purchase by the members. These warehouses ordinarily provide service for four or five counties. Their locations are shown in figure 15.

Feeds are purchased by the State association under contract from a commercial mill and shipped direct from the mill to the local warehouse. Billing is to the State association on open account and settlement is made weekly. Shipments are charged against funds deposited with the State association by the locals. In most cases the locals deliver feed to the farms in their own trucks. The total mark-up by the locals is about $8 per ton. Volume of feeds handled has been about 5,000 tons per year. This association believes that substantial benefits in the way of cost and dependable quality of feeds are to be derived from the ownership of manufacturing facilities and hopes to be able to establish and operate a feed mill in cooperation with other associations.

In addition to feed, this association provides purchasing service on fertilizer, garden and field seed, pressure cookers, fruit jars, and other farm supplies, and markets cotton and poultry. It also operates a 165,000-egg chick hatchery. Through careful selection of flocks from which hatching eggs are drawn and through elimination of the long express haul formerly necessary by having the chicks sent direct to the farms, chick mortality has been reduced from an average of 23 percent to about 10 percent.

While this association operates in the same territory as Mississippi Federated Cooperatives, there is only slight overlapping of membership and therefore very little direct competition between the two associations.

For the year 1942-43 this association purchased farm supplies for members amounting to $554,000 and marketed $198,000 worth of poultry and 30,979 bales of cotton valued at $3,174,000, making a total volume of business of $3,925,008.41. The balance sheet as of April 30, 1944, shows a current ratio of 1.13 to 1.00 with members' equity of $173,560, equal to 30 percent of the total assets. While the current ratio was not as high as might be desired, savings were satisfactory and members' equity was being built up toward a strong financial condition.

COOPERATIVES OF LOUISIANA, INC., BATON ROUGE, LOUISIANA

This association was set up in September 1943 as an overhead service organization to purchase supplies and market cotton and other products for cooperative associations operating in the State of Louisiana. Offices were opened in Baton Rouge in January 1944. There are about 30 cooperatives now operating in Louisiana. Eighteen of these have joined Cooperatives of Louisiana and it is expected that others will join. Present membership includes cooperatives handling dairy products, poultry, strawberries, vegetables, sweetpotatoes, and farm supplies; and a freezer-locker plant; a tung oil mill; a cottonseed oil mill; and a sugar mill. Each member takes out one share of common stock at $100. Member cooperatives also purchased $94,900 worth of preferred stock to finance operations.

While several box factories operate in that area, most of them are manufacturing containers for war material and there is an acute shortage of crates and hampers for farm products. The new association was almost immediately presented with the problem of assuring supplies of containers for Louisiana cooperatives and a box factory at Hammond, Louisiana, was purchased to meet this need. While there is considerable room for modernization of operations at the factory, it has been of great value in meeting a critical situation for the members. In the first 11 weeks of operation, crates, baskets, and hampers valued at $130,000 were supplied.

Plans for expansion as the time appears propitious include the manufacture of feed and fertilizer and the purchase or manufacture of other supplies for members.

A large part of the grain ingredients of feeds sold in Louisiana comes from Texas and Oklahoma. Rail shipments moving west across the Mississippi River encounter a severe freight penalty. It appears then that a feed mill to supply this area should be located somewhere in western Louisiana, at a point where the feeds can be manufactured and shipped on to the local associations in a direct line of haul under favorable milling-in-transit privileges. Careful study of rail rates and privileges would be essential to determine the most advantageous point for location of such a mill, taking into consideration the locations of the associations that would obtain feed supplies from this source.

LAFAYETTE DAIRYMEN'S COOPERATIVE ASSOCIATION, INC., LAFAYETTE, LOUISIANA

This association was formed late in 1943 as a bargaining association to protect the interests of dairymen in Lafayette, St. Martin, and other adjoining parishes. It plans to build a dairy plant and to take over the distribution of milk in its area. It now has 58 members producing about 2,000 gallons of milk per day. Producers who have their own routes and sell about 800 gallons a day are willing to turn over their routes as soon as the association is ready to take them over.

Modern office and enclosed truck-loading docks at the feed warehouse of the Lafayette Dairymen's Cooperative, Lafayette, La.

While this is primarily a milk marketing cooperative, the feed situation was so serious that the association moved into feed distribution while plans were being

perfected for handling milk. It leased a warehouse and entered into a contract with a commercial milling company to supply it with mixed feeds. Beginning operations on February 1, 1944, it distributed to patrons $87,000 worth of feed in the first 5 months. Volume continues to increase. Some fertilizer and seed have also been furnished members.

The association is trying to obtain a suitable site on which to erect a modern dairy plant and a feed mill. When this is done it is believed that volume of both milk and feeds will be more than doubled, as many producers in adjoining parishes are anxious to join.

The association delivers about 80 percent of the feed to its members' farms and makes no difference in the price for farm or warehouse delivery. About 30 percent is sold on short credit and the balance for cash. Credit is usually extended for one delivery only. Each order must be paid for before another will be charged.

There is a large demand for feed in cotton print bags. An extra charge of 6 cents each must be made for these but the dairymen find a ready demand for the empty bags at 25 cents to 30 cents each for use in making women's clothes and many other articles.

This is an area of small farms with many dairy cattle, hogs, and poultry. Large quantities of sweetpotatoes are produced and drying of the culls for livestock feed is being developed. This product has roughly the same analysis as corn and can be used to replace a large part of the grain in mixed dairy feeds. Cottonseed meal and molasses are available from nearby mills and some locally produced grain is to be had. With these ingredients available locally and the possibilities of developing delivery of feed to farms by trucks which bring milk to the proposed dairy plant, it would appear that the association should find a well-planned feed mill a desirable addition to its facilities.

DAIRY FARMERS COOPERATIVE ASSOCIATION, INC., KENTWOOD, LOUISIANA

The Dairy Farmers Protective League was formed in 1933. In 1942, in order to expand into activities not contemplated when the League was organized, a parallel association named the Dairy Farmers Cooperative Association was started with the same membership. The two associations are now in the process of being merged under the name of the latter.

The combined associations have now about 2,140 members comprising all dairymen supplying milk to the New Orleans market and some of those supplying Baton Rouge. Annual volume of milk represented is about 110 million pounds and the association receives a check-off of 1 cent per 100 pounds on this. While there is now a ready market as fluid milk for all that is available, the association is making plans for a processing plant to take care of surplus milk after the war when, it is assumed, demand will be greatly reduced because of reduction in nearby military establishments and the return of large industrial establishments to peacetime production.

The association operates as a bargaining agent between the farmers and the milk distributors. By being in position to take care of any postwar surplus through this processing plant, it hopes to be able to maintain a satisfactory price situation for

milk produced in its territory. Members reside in nine Louisiana parishes and the six counties in Mississippi adjoining that part of Louisiana which lies east of the Mississippi River.

As a wholesale purchasing cooperative it handles seed, lime, and dairy supplies to the extent of about $20,000 per year.

This area does not produce large quantities of grain and much mixed feed is shipped in from commercial mills. There has been considerable complaint recently as to the quality of mixed feeds now supplied. While it is believed that ownership of a feed mill would provide a service of much value to the members, the association feels that any action in this direction should be delayed until the proposed processing plant is built and its operations are on a satisfactory basis.

Trucks hauling livestock or other farm products to market can often advantageously haul feed back to farms or local associations.

With a processing plant in operation at Kentwood, much feed could be hauled back to farms by the trucks that bring in milk. However, rail connections to members located east and west of the main line of the Illinois Central are not particularly good. It might be advantageous to locate a mill at some point between this area and the source of supply of feed ingredients so that feeds could move by rail from the mill to farmers' local stations on a milling-in-transit traffic arrangement.

ST. LANDRY SOYBEAN COOPERATIVE, INC., WASHINGTON, LOUISIANA

This association was organized early in 1943 and purchased an oil mill, at Washington, St. Landry Parish, Louisiana, which had not been operated for some time. The association began milling operations on July 1, 1943. It has 198 farmer members and two cooperative gins.

While it was organized with the main purpose of processing soybeans grown in the community, the 1943 crop was a complete failure and no local beans were available. It is expected that at least 100,000 bushels will ordinarily be produced in the vicinity of the mill. During the summer of 1943 the mill crushed 919 tons of imported babassu nuts for the Commodity Credit Corporation on a contract and then purchased and resold the meal. During the winter of 1943-44, 50,000 bushels of soybeans were purchased from the Commodity Credit Corporation and processed in accordance with its regulations. The association also crushed 2,400 tons of cottonseed from the 1943 crop. The seed was handled through the two member cotton gins and several private gins operating in that vicinity which gin cotton for members of the St. Landry association.

All patronage dividends resulting will be paid to members and nonmembers alike. Whole pressed cottonseed cake is produced as there is a good demand for this product. Steps are being taken to channel seed receipts entirely through cooperative gins.

Operating results per ton of seed are estimated by the association as follows:

Proceeds:		
Cottonseed oil	290 pounds @ 12 5/8 cents per pound	$36.612
Cottonseed cake	1400 pounds @ $43.00 per ton	30.100
Mill linters	150 pounds @ 4.1 cents per pound	6.15
Gross proceeds		$72.862
Less:		
Cost of seed	$59.00	
Hauling	1.70	$60.700
Gross margin		$12.162
Less operating expense:		
Selling	.100	
Fuel	.650	
Plant labor	2.750	
Supplies - bags, etc.	3.250	
Overhead - including idle season	1.312	
Depreciation	.600	$8.662
Net margin		$3.500

This is based on a 70-day operation and a longer season would increase the net margin.

The balance sheet as of April 30, 1944, shows a current ratio of 1.8 to 1.0. Plant investment is carried at $30,408.28 after depreciation. Members' equity of $43,459.64 was equal to 49 percent of total assets. This equity was made up of $18,520 of capital stock and $24,939.64 of undivided savings.

There is a ready demand from farmers and feed mixers for the meal produced. The association handles no mixed feeds. It could well install grinding and mixing equipment. With their own high protein meals and with molasses from nearby sugar mills, they should be able to manufacture good feeds for local sale advantageously. The association has ample land on which to place additional buildings. Expansion into the feed business would distribute overhead costs over a longer operating season and provide a valuable service to farmers of that area. Since much of the grain necessary for the manufacture of mixed feeds would have to be shipped in from grain surplus areas, it appears likely that the best arrangement would be a small mill to use to advantage local ingredients, operated in conjunction with the oil mill, and membership in a regional feed mill located somewhere between St. Landry Parish and the sources of grain supplies so that feeds could be manufactured and shipped on under favorable transit arrangements.

From these brief accounts, it is seen that there are State-wide wholesale associations in each of the three States. In Louisiana there is also, at Pineville, the Farmers State Exchange, which was not visited. This association is similar to the

Central Farmers Exchange, in Mississippi, in both organization and membership. The Tennessee Valley Fertilizer Cooperative is not a State-wide organization but it does have several county association members in the northern part of Alabama.

The local distribution system provided through these organizations would afford an established outlet for feeds. Those now handling this commodity would, no doubt, be glad to turn their distribution efforts to a line of feeds manufactured by a cooperative mill in which they had an interest and it is probable that many of the other locals would add feed distribution to their present activities. The three local independent associations in Louisiana would find it advantageous to have their own local mills or join in the ownership of a larger mill designed to supply a more extensive territory.

REASONS WHY FARMERS SHOULD OWN COOPERATIVE FEED MILLS

While savings have been stressed as one of the main reasons why farmers should unite in the cooperative purchasing of farm supplies, there are other good reasons for taking such action. As they apply particularly to feed, some of them are listed here.

1. High quality. This term as applied to feeds does not mean "fancy." It means feed properly made from sound ingredients carrying the required nutritive elements in the proper proportions for its specific feeding purpose; feed without low-grade fillers; and absence of musty or damaged ingredients. It means feeds not loaded with calcium (limestone) to add to the weight. Calcium and some other minerals may well be added to feeds to meet natural deficiencies in certain areas, but when used in excessive quantities they are wasted and merely serve to make a bag of feed look like a "bargain." Cooperatives emphasize the economy of high quality in feeds. They are interested in providing their members with feeds that will produce the highest net returns on the farm. Their feeds are built up to predetermined requirements and not down to a price calculated to meet competition.

2. Uniform quality. High producing farm animals do not respond favorably to sudden changes in their diet. When changes are made in feed formulas, as has been frequently necessary during the war period because of shortages of certain ingredients, careful compounding can minimize the effect of these changes. Cooperatives usually advise their patrons of material changes and tell them when feeding practices should be altered.

3. Known quality. Some of the most successful feed cooperatives use "open" formulas and print on the tag the exact quantity of each ingredient used in making a ton of that feed. Because of recent shortages of various ingredients, many associations have had to abandon this policy temporarily but expect to return to it as soon as supplies of ingredients can again be depended upon. In any event, the cooperative has nothing to hide from its patrons, and the farmer can find out at any time just what is in the feeds manufactured for him.

4. Price. Cooperatives do not make "profits." Savings belong to the members and after expenses have been paid and desirable expansion provided for, they are returned to members in cash at the end of the year, or later if a revolving system of stock or certificates of indebtedness is used. It is desirable to price feeds in line with competition and return savings in this way rather than to cut prices and possibly start a "price war." No farmer can look at two bags of feed

and say that one is worth 10 cents or 50 cents more than the other, although he can recognize some of the ingredients and tell if the feed is loaded with "junk." The test of value is the feeding results. On this basis feed cooperatives have been remarkably successful.

5. Bag return. A substantial feed bag can make from 5 to 10 trips to the farm before it need be discarded. Many cooperatives have their own branded bags returned by members, fumigate them to avoid any possibility of the transfer of disease, make minor repairs, and use them again. When a farmer is using several tons of feed a month, the return allowance of from 10 to 15 cents or more per bag adds up to a sizable saving in the course of a year.

This bag cleaning equipment has a powerful fan to draw all dust and dirt from returned bags. They are then sorted and patched and thoroughly fumigated so as to avoid the possibility of transmitting disease.

6. Minerals. Mineral deficiencies vary in different parts of the country. The addition of the right proportions of all the deficient minerals is cheap insurance for maximum results in feeding. The use of more than is required is an unjustified waste. Cooperatives "tailor" their feeds to meet the mineral requirements of the regions in which they operate. Where "mineral mixtures" are fed separately, it is a common fact that those made by cooperatives are priced so low in comparison with commercial mixtures that farmers at first are skeptical as to their value.

7. Vitamins. We have learned that proper vitamin balance is just as essential for our farm animals as it is for man. Much of the publicity relative to the vitamin values in feeds, however, takes on the nature of "patent medicine" advertising. Most feed cooperatives carefully test ingredients for vitamin potency and maintain a proper balance by using basic vitamin carriers without buying high-priced products for which exaggerated claims are made.

8. Use of local ingredients. Any cooperative feed manufacturer should use ingredients available in its own section of the country, to the largest practical extent.

The South has cottonseed meal and peanut meal, lespedeza and peanut hay, molasses, and many other ingredients that can be used just as successfully as those which must be shipped in from sections hundreds of miles away. At least one association uses peanut skins in place of wheat bran in dairy rations.

Careful formulation by animal nutrition specialists enables the manufacturers to combine these ingredients so that feeds may be made in large part from such low-freight materials. The knowledge of the State experiment station specialists who have had experience in using these ingredients should be enlisted in drawing up formulas and these specialists should be consulted when changes are to be made. When an association distributes feed in two or more States the specialists from these States should meet in conference with the operating officials of the feed mill and work out the best combinations of ingredients in view of availability, price, and the specific properties of each.

A cooperative feed manufacturing association is simply a group of farmers working together to manufacture their own feeds. They are not interested in making the feed "look good" or in putting the cheapest price tag on the bag. They are interested in value in use; that is, feed that will produce results in their herds and flocks and give them the largest returns from their feeding operations. Many members of the older feed cooperatives say that they no longer look at the price or even the "open formula" on the tag. They are confident that the feed carrying the brand of their cooperative will always be the best possible for the purpose and that the prices will represent a substantial saving to them.

FACTORS ESSENTIAL TO SUCCESSFUL FEED MILL OPERATION

A few of the factors which should receive careful attention before a feed milling enterprise is established are given below. They are not listed in the order of importance, since their relative values would vary under different conditions. To meet competition and provide the service necessary for the successful operation of any such cooperative enterprise, all these factors should be reasonably favorable as compared with alternative sources of feed supplies.

In the North, enclosed truck loading docks are almost essential but, even in the South, ample cover protects feed being loaded from rain and employees and patrons from hot sun.

1. The mill should be well designed and of adequate size. Too many feed mills are merely warehouses with some feed grinding and mixing equipment set in them. This adds tremendously to labor costs and militates against the best efforts of management to keep expenses down. Excessive investment in equipment should be avoided but if a machine will save labor, do a better job, and pay for itself in a reasonable length of time, it is false economy to do without it. Ingredients can be stored and handled in bulk more cheaply than in bags. The flow should be as nearly as possible in a straight line from the receipt of ingredients to the loading out of finished feeds. Equipment manufacturers will supply rough plans based on an outline of specific requirements, but these should be checked with contractors or construction engineers experienced in the building of feed mills and with managers of other successful cooperatives. Corrections are much cheaper in the planning stage than after the mill has been constructed.

Where the main ingredients are brought in by rail, ample bulk storage adjacent to the feed mill is especially important.

The size of the proposed mill is almost always a vexatious question. Few cooperative feed mills have been built too large. When high quality dependable feeds are made available to farmers by their own cooperative organization, the demand is usually far greater than anyone had anticipated. One bank for cooperatives that has financed several small feed mills has about decided to refuse to assist a cooperative in buying an old mill. As to size, this bank says, "Take the largest estimate as to volume of any responsible person conversant with local conditions, multiply that by two, and by the end of the first year it will be found that the mill is about the right size." This bank's experience has been gained, however, largely in a time of rapidly expanding feed demand. The possibility of a period of lower prices for livestock and livestock products, sometime after the end of the war, with a consequent greatly lessened demand for feeds, should be kept in mind. It is generally safer to build for assured demand; drawing up the plans so that capacity can be increased readily when demand warrants.

2. Location of mill. Where the bulk of the feed ingredients is produced locally, the mill should be as close to the patrons' farms as possible. When feed can be hauled from mill to farms by trucks which regularly bring milk, eggs, livestock, or other farm products to a central plant, delivery costs can more easily be held to a minimum. If, on the other hand, grain and other principal ingredients must

be brought in by rail from distant sources, the mill should be at some point between these sources and patrons' farms so that milling-in-transit privileges can be used to full advantage.

Feed is a bulky commodity and cheap transportation is essential in meeting competition. Under varying conditions, this may be by water, rail, or truck, but this factor must be considered from all angles.

A river location should have considerable advantage for a mill large enough to buy the main ingredients in lots of from 250 to 1,000 tons - the minimum for bulk shipment by barge (as compared with the 40- or 50-ton carload rail minimum). It is generally true, however, that to meet barge competition the railroads publish more favorable rates to points having barge service than to points served by rail only. A river location may, therefore, permit substantial savings in freight even though ingredients are brought in by rail.

Other things being equal, there may be advantages in location in a small or medium-sized town where wage rates are apt to be lower and labor more dependable than in large centers.

Service by more than one railroad is desirable. Switching privileges and charges should be carefully investigated.

Feed is a bulky commodity and transportation costs usually make up such a substantial part of the price at the farm that a mill not located so as to take full advantage of the lowest transportation charges will find it extremely difficult to meet the competition of those which are so located.

3. Management. In successful feed mill operation quality and uniformity of the product must be maintained, labor and equipment used efficiently, and costs kept at a minimum. These essentials require the services of a manager who knows the details of feed mill operation and has good administrative ability. A large mill can spread the manager's salary over more tons of feeds and hence can afford to pay more to obtain the best management.

It is seldom satisfactory to hire a cooperative mill manager from the commercial milling trade, as it is essential that he know and believe in cooperation. In established cooperative organizations, where men of proven general ability have developed, it is probably safer to provide such a man several months training in feed mill operation than to bring in an outsider with milling experience but without a knowledge of and belief in the principles of cooperative organization.

A feed mill manager should know farming and livestock. He should know the country in which he operates and the people of that section. He should have or should acquire a basic understanding of feeds and feeding and the values of different ingredients. It is advisable to give him frequent opportunity to visit other feed mills and to meet in conference with other managers to learn how they meet the day-to-day problems of operation. A good organization should see that there is a second man coming along who can handle the mill for short periods to free the manager for such purposes and to be ready to take his place in case of emergency. An organization that depends too much on an "indispensable" man will sooner or later come to grief.

4. Skillful buying. Ingredients must be kept coming to the mill in a never-ending stream. They must be on hand and ready for use as required, so as to avoid shutdowns. They must be bought at the lowest possible price consistent with quality. Merely buying from the handiest broker will not enable the cooperative feed manufacturer to meet competition. For these reasons, a new association might well investigate the possibility of having one or more established cooperative feed manufacturing associations do the bulk of its buying on a reasonable basis of compensation, at least during its early stages, while experience is being gained and while competition is keen. The mill could buy available local ingredients at comparable prices and gradually expand, if desirable, into the purchase of all its ingredients. The association acting as purchasing agent would also derive some advantage from increased buying power for its own ingredients because of the added volume.

5. Adequate and efficient distribution. No matter where the feed mill is located, the product must find its way to the farms of its patrons. Some feed cooperatives have developed a system of car-door distribution but in most cases distribution is through local stores or warehouses. The organization may be a federation of local member associations or a centralized set-up under the control of an overhead organization, depending on local conditions and preferences.

A thoroughly modern farm supply store combined with the State headquarters office of a wholesale purchasing cooperative.

The federated type of association appears to be well established in Alabama and Mississippi. The local associations must be "sold" on the value of the feed service and must be aggressive in getting members interested so as to provide volume for the mill. The mill should be in frequent contact with the locals and assist them in efficient distribution so as to command the confidence of the farmer members and develop full use of the feed service.

The original demand for cooperative feed manufacturing should come from the members, but constant effort should be given to keeping the contacts between patron and mill as pleasant and as efficient as possible. A cooperative has no place for high pressure salesmanship, but if it is to meet competition it must get its product to the member's farm in a satisfactory and efficient manner. Not even a local mill can stack its feed at the warehouse door saying, "Come and get it," and expect to build up its business.

ADVANTAGES AND LIMITATIONS OF LARGE MILLS

Both large and small feed mills have certain advantages under specific conditions and certain limitations. It should be worth while to consider briefly some of these factors.

Among the advantages of large mills are:

1. The large mill can buy ingredients in large quantities. It can keep in close touch with many markets. It can buy and handle most ingredients in bulk and, to that extent, avoid use of the extra labor required in handling bags.

2. The large mill permits more efficient operation. There is more bulk handling. Mechanical appliances reduce the amount of hand labor required. Management and other overhead costs are spread over a larger number of units and will ordinarily be less per ton of feed.

3. The large mill will probably be located where it can use milling-in-transit privileges to the best advantage. If on navigable waters, it can use the larger shipments of ingredients necessary for barge or ship transportation.

4. Uniformity of product is more readily attainable by a large mill. Quality control can be made more effective through the operation of a laboratory constantly testing ingredients and finished feeds. Many such laboratories are said to more than pay their entire expense through refunds obtained on ingredients not up to guaranteed standards.

5. Some of the larger cooperatives maintain experimental farms to supplement the work of the State experiment stations. They can start work on a problem as soon as they see it coming and can also use these farms for demonstration purposes.

6. Since the large mill will ordinarily supply a wider range of feeds to farmers operating under different conditions, there will usually be less seasonal variation in volume. This allows more effective use of all factors of production.

Limitations of large mills:

1. Since distribution will be over a more extensive area, the large mill cannot use truck transportation as well as the local mill. Where feed can be loaded at the mill and hauled direct to the farm, extra handling and expense is avoided.

2. Ingredients are used in such quantities that usually local supplies cannot be depended upon. Even in surplus grain sections, most of the supplies must come in by rail and each handling adds to the cost.

3. Large mills are usually located in metropolitan rail centers where labor rates, taxes, and other costs are high.

ADVANTAGES AND LIMITATIONS OF SMALL MILLS

Many of the advantages and limitations of small mills will be the converse of those listed for large mills but some of the principal ones may be stated here.

In general farming sections, much cooperative feed finds its way to the patron's farm in one- or two-bag lots in the back of a car or in farm trucks or wagons.

Advantages of small mills:

1. When a small mill is in a section where some of the principal feed ingredients are produced, these may be obtained direct from farmers, cottonseed oil mills, rendering plants, and so forth, without incurring the added expense of a rail haul.

2. Feeds can be delivered direct from mill to farm by truck. If there is a nearby milk plant, produce house, or livestock market to which farm products are regularly delivered by truck, these same trucks can take feed out to the farms as a back haul very economically. Cost of feed at the farm is the true criterion. If mill savings are more than lost in added distribution costs, the economy of large-mill operation is lost to the farmer.

3. A small mill can often be operated in connection with some other cooperative enterprise so that management and labor can be utilized more effectively by both, overhead costs spread over a larger volume, and many of the advantages of large-scale operation be obtained.

4. Feeds can often be made to better fit the needs and desires of farmers in a particular section.

5. Since the small mill will usually be in a smaller town, taxes and wage rates may be expected to be lower and it will usually be easier to build up stable and efficient personnel.

Limitations of small mills:

1. Ingredients must be bought in smaller lots. If adequate bulk storage is provided, some of the major ingredients can be purchased in carload lots but many of the other materials used will have to be procured in less-than-carload lots at higher prices.

2. More of the ingredients will have to be handled in bags, involving more labor. Less mechanical handling can be used.

3. It is more difficult to maintain uniform quality. Commercial laboratory service can be used, but there will be some delay in getting the reports of analyses.

4. Fire protection usually will not be so good and insurance rates consequently will be higher.

There can be no cut-and-dried answer as to whether a large mill or a small mill will provide the best all-around service. The answer must be sought in the light of all the factors affecting any particular mill project.

It is usually safer to start on a small basis and expand as experience and volume are built. The ideal situation would be to build a small mill at a point where all possible factors are favorable to the operation of a large mill, but to build with the possibilities of expansion distinctly in mind so that mill capacity can be added readily as needed. The ideal is, of course, not always practicable, but a considerable degree of elasticity can be provided for.

POSSIBILITIES IN COORDINATED OPERATION

Some feed cooperatives where conditions favor the operation of small mills have several mills of small to medium size under more or less centralized management. This makes possible many of the advantages of large-volume purchasing of ingredients and supplies. Unless control is highly centralized it is usually advisable for each mill to use its own brand, as it will be difficult for the mills to keep turning out feeds of close uniformity to agreed standards.

This western cooperative handles feed, lumber, petroleum products, general merchandise, and other farm supplies. Its many buildings make up a little business community in itself.

This type of organization is particularly effective where many of the necessary ingredients can be obtained locally or where an association has truck routes bringing eggs or other products to a number of receiving stations. Mills operated in conjunction with such stations can load feed directly onto the trucks for delivery to the members' farms.

In some cases a number of small mills can work effectively in conjunction with a large mill. The large mill can prepare the more complicated feeds and make "premixes" of proteins, vitamins, and minerals to which the small mills grind and add locally produced grain in the right proportions to make the complete feed. Transportation charges are thus saved on the bulk of the ingredients. These small mills usually do custom grinding and mixing whereby a farmer can have his feeds made up in large part from ingredients produced on his own farm, buying the other necessary materials from the mill.

SUGGESTIONS

1. With $90,000,000 worth of feed and feed ingredients now sold in a year to farmers in the three States of Alabama, Louisiana, and Mississippi it would seem that sound cooperative feed manufacturing organizations should be able to obtain ample volume for efficient operation.

2. Feed cooperatives as a class have been remarkably successful. Their volume has increased consistently. Their service has been appreciated by farmers. One association which completed a modern feed mill early in 1942 at a cost of about $650,000 reports that this mill paid for itself in full in the first 17 months of operation. A small mill distributing part of its output in the Fifth Farm Credit District reports net savings of over $22,000 in its first 11 months of operation, on a total investment of probably $35,000 or $40,000. These records were, of course, made during a period of heavy demand for feeds. The probability of lower prices for livestock and livestock products with a consequent reduction in use of purchased feeds by farmers should be kept in mind.

3. As some indication of what may reasonably be expected in the way of volume, consideration should be given to facts such as the following. Mississippi Federated Cooperatives, distributing feeds manufactured by privately-owned mills, had a 1943 volume of more than a million dollars, or approximately 17,000 tons. Lafayette Dairymen's Cooperative, with 58 members, is distributing feeds obtained under a contract with a private feed manufacturer at the rate of about $250,000, or 4,000 tons of feed per year. Alaga Feed Cooperative is making for its 40 members about 4,000 tons of feed per year. Several other associations now operating in these States could be expected to duplicate these figures and, with high quality feeds available on a cooperative basis, to add to them considerably.

4. A feed mill need not be owned and operated by a single association. A milling cooperative organized and operated by two or more other cooperatives may have many advantages. For instance, a single cooperative mill could well be set up to supply feeds to the member associations of the Tennessee Valley Fertilizer Cooperative, county locals of the Farmers Marketing and Exchange Association operating in northern and central Alabama, and some of the members of Mississippi Federated Cooperatives in northeastern Mississippi. Similarly, Mississippi Federated Cooperatives, Central Farmers Exchange, and Dairy Farmers Cooperative Association might find it feasible to own a mill jointly at possibly Memphis or

Greenville. There is ample precedent for such organizations and setting them up involves no great difficulties. They secure for members the advantages of large-scale operation and tend to minimize competition between cooperatives in the same or contiguous territories.

5. It appears to be the general feeling that the South has been somewhat of a dumping ground for low-grade feeds from other parts of the country. Many farmers know the economy of high quality feeds but others will have to be educated to appreciate it. A cooperative feed manufacturer should devote considerable time and effort to getting information to its members on improved feeding practices and basic animal nutrition. It should work very closely with State extension specialists. Its purpose should be to provide to farmers a service that will make farming more profitable and attractive rather than merely to sell feeds.

6. Location of a feed mill with respect to transportation is of prime importance, both in getting feeds from mill to farm and in getting ingredients to the mill at the lowest possible cost. Milling-in-transit freight rates and other traffic factors should be made the subject of careful study by a transportation specialist before the proper location for a mill is definitely determined.

Ample railroad siding space for unloading ingredients and loading finished feeds should be provided in mill plans.

7. A feed mill should provide for the manufacture of complete mixed feeds, high protein supplements and mineral mixtures, and also should furnish local mixers and farmers with feed ingredients, either by direct shipment in carload lots or in mixed shipments with prepared feeds from the mill.

8. Before making definite plans, a committee of directors and officers of any association that contemplates entering the feed manufacturing business should visit several of the cooperatives now operating feed mills. Ideas as to plans, equipment, and operating methods will be obtained which will be invaluable to the new enterprise.

9. Careful, intelligent planning of a feed mill will lower labor costs materially and facilitate the manufacture of a product of uniform quality. Makers of mill equipment will draw up rough plans but, before final plans are drawn or contracts let, these rough plans should be checked with successful feed mill operators. Machinery salesmen are sometimes inclined to over-equip a mill. Operations may well be started with a minimum of essential equipment but with careful and ample provisions for expansion.

10. Good management is essential to successful feed mill operation. Efficient operators are hard to find. Sometimes one can be obtained from the private feed trade but often such men have the profit idea so thoroughly in mind that they cannot adapt themselves to cooperative operation. It may be more satisfactory for the cooperative to choose from its own organization a man who has demonstrated administrative ability, and give him several months' training in feed mill operation. In any case the manager should be given an opportunity to visit other cooperative feed mills from time to time in search of ideas that can be used in his own operations. The ideal feed mill manager should also know feeds and feeding, livestock, and farming conditions in his territory and should get along well with the people who will be the patrons.

11. Skillful buying of ingredients is a large factor in successful feed mill operation. Full advantage should be taken of feed materials available in the section. It takes time to form the many contacts with sources of supply which a feed mill should have. Unless a manager is obtained who has marked ability along this line, it is suggested that arrangements may be made with some other feed cooperative to do a good part of the buying for the new mill. This concentration of buying power would have advantages for both associations.

12. A feed mill cannot be stronger than its distribution system. Fortunately, several of the associations studied have local units already established, many of which are now distributing feeds. Provision should be made for frequent contacts between the mill, these local associations, and the patrons. Officials should cooperate with extension workers in teaching improved feeding practices to the patrons and to local association personnel. Fieldmen should strive to build up the efficiency and improve the service of the locals. A constantly increasing feed volume must be built on satisfactory and profitable use in the herds and flocks of farmers. This is the ultimate goal of a feed cooperative.

13. Formulas should be worked out carefully with the assistance of nutrition specialists of the State colleges and experiment stations. Frequent conferences between management and these specialists will facilitate the production of feeds having the greatest value in use in the light of market and operating conditions. Feed control officials in the several States will often have worth-while suggestions for the mill operator.

COST OF BUILDING A FEED MILL

The cost of erecting and equipping a feed mill will vary greatly according to type of construction and equipment, amount of bulk and sack storage space provided, and general construction costs in particular areas. Of interest in this connection are

the costs of fixed assets listed by mills of different sizes, several examples of which are given here.

Code number of mill	Capital assets	Annual capacity in tons
1	$665,000	150,000
2	346,000	100,000
3	75,000	40,000
4	51,000	40,000
5	55,000	20,000
6	90,000	40,000
7	35,000	10,000
8	25,000	5,000

Most of these mills are located in the East or in the Southeast. Their ages vary considerably. Some were purchased, others were built by the cooperatives. The figures given are before allowance for depreciation. They will serve only as a general guide to the investment required in establishing a feed mill.

Mill No. 1 is a modern line-mix mill that has proven very economical in operation. The cost of No. 6 includes about $40,000 for the site. No. 8 is adding about $7,500 worth of equipment which it is expected will increase the annual capacity to about 15,000 tons. A small local mill equipped with a medium sized hammer mill, batch mixer, scales, a few bins, and so forth could be built in most places for from $10,000 to $16,000. Equipment for storing and mixing molasses would add at least $2,000. Bulk storage bins will run from 30 cents to 50 cents or more per bushel of capacity. Endless variations in size, style, and equipment can be made to meet particular needs. Funds spent for planning, labor saving equipment, and provisions for later expansion will usually be well invested.

COSTS OF OPERATION AND SAVINGS PER TON

Costs of operation vary greatly and are affected by many factors. Without much more detailed information than is now available it is impossible to show the relationship of various factors such as size to operating costs. Net savings vary with pricing policies, services included, use of full mill capacity, types of feed manufactured, and so on. As with cost of plant, a few figures will at least give some idea of the range within which it may reasonably be expected that expenses will fall. Figures for some of the plants listed above are given below:

Code number of mill	Expenses per ton	Net savings per ton
1	$2.50	$5.60
2	3.95	7.20
3	3.00	4.70
4	3.10	6.15
5	3.90	5.40

These figures include mill operation and overhead but do not include distribution costs or expenses of membership relations, publicity, and the general operations of the overhead membership organizations to which the mills contribute. Two smaller local mills making about 5,000 and 10,000 tons per year, respectively, give total expenses as $6.72 and $6.01 per ton with net margins of $6.03 and $1.32 per ton. This includes delivery to the farm and all adminstrative expenses.

It is clear that the second mill is pricing its feeds much more closely than the first. The fact is that prices were set so as to attract the trade of a few members buying in large quantities who had been buying from commercial sources at wholesale prices. As a result, since cooperative prices are the same to all, those operating small farms have been obtaining their feeds at prices much under those asked by dealers on similar quantities. It appears that competitors are doing their best to hamper this association by offering very attractive concessions to some of these large users.

A large eastern cooperative determines the wholesale price to member locals by adding about the following margins to cost of ingredients, bags, and so forth.

Feed	Margin per ton
Dairy feeds	$3.75
Poultry mash	4.20
Stock feeds	4.00
Scratch feeds and ingredients	1.00

This scale has been worked out to be as nearly equitable as possible, to keep prices generally in line with competition, and to provide substantial patronage dividends. It is not a set scale but is varied to meet changing conditions.

Many of the operating problems of cooperative feed mills are discussed in Farm Credit Circular WC-13, "War Adjustments of Feed Cooperatives in the East and Middle West," which may be had upon request from the Director of Information and Extension, Farm Credit Administration, Kansas City 8, Missouri.

U. S. DEPARTMENT OF AGRICULTURE
FARM CREDIT ADMINISTRATION
KANSAS CITY 8, MO.

OFFICIAL BUSINESS

FORM P8-3/45-973
PERMIT NO. 1001

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, $300

MR. D. W. GRAF, LIBRARIAN,
BUR. OF AGR'L. CHEM. & ENGRN.,
DEPT. OF AGRICULTURE,
103 WASHINGTON, D. C.